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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

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<input checked="" type="checkbox"/> Additional inventors are being named on the <u>2nd</u> separately numbered sheets attached hereto					
TITLE OF THE INVENTION (280 characters max)					
METHOD AND APPARATUS FOR MARKETING A VENDING MACHINE USING PROMOTIONAL MESSAGES					
Direct all correspondence to: CORRESPONDENCE ADDRESS					
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ENCLOSED APPLICATION PARTS (check all that apply)					
<input checked="" type="checkbox"/> Specification		Number of Pages		38	
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		<input type="checkbox"/> Other (specify)			
METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT (check one)					
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.		<input type="checkbox"/> A check or money order is enclosed to cover the filing fees		FILING FEE AMOUNT (\$)	
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The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
<input checked="" type="checkbox"/> No.					
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Respectfully submitted,

SIGNATURE

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12.09.03

REGISTRATION NO.

40,484

(if appropriate)

Docket Number:

03-056

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INVENTOR(S)/APPLICANT(S)		
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Number 2 of 2

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CERTIFICATE OF MAILING BY "EXPRESS MAIL" (37 CFR 1.10) Applicant(s): WALKER et al.			Docket No. 03-056
Serial No. Not Yet Assigned	Filing Date December 9, 2003	Examiner Not Yet Assigned	Group Art Unit Not Yet Assigned
Invention: METHOD AND APPARATUS FOR MARKETING A VENDING MACHINE USING PROMOTIONAL MESSAGES			
<p>I hereby certify that the following correspondence:</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;">PROVISIONAL PATENT APPLICATION</div> <p style="text-align: center;"><i>(Identify type of correspondence)</i></p> <p>is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on</p> <p style="text-align: center;"><u>December 9, 2003</u> <i>(Date)</i></p> <div style="text-align: center; margin-top: 20px;"><u>Michael D. Brinton</u> <i>(Typed or Printed Name of Person Mailing Correspondence)</i>  <i>(Signature of Person Mailing Correspondence)</i> <u>EL985254714US</u> <i>("Express Mail" Mailing Label Number)</i></div>			
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METHOD AND APPARATUS FOR MARKETING A VENDING MACHINE USING PROMOTIONAL MESSAGES

BACKGROUND INFORMATION

There are more than one million vending machines in the United States. Sales through vending machines exceed \$40 billion per year. Vending machines provide such diverse products as snack foods, soft drinks, coffees, tea, milk, stuffed animals, watches, and hamburgers. Vending machines have a number of associated costs, which may include the cost of the machine, the cost of electricity, and the cost of maintenance and servicing. Therefore, in order to operate profitably, vending machines typically require a significant number of transactions per unit time. The particular number required varies based on the type of vending machine and a number of other factors. However, in general, a vending machine has a greater chance of achieving profitability with more exposure to consumers. A vending machine operator, in deciding whether to place a vending machine in a particular location, will typically estimate the number of people who frequent that location. The vending machine operator may then decide whether or not to place the vending machine in that location based on the number of people.

Approximately half a million vending machines in the U.S. are placed in or around company offices. Another one hundred sixty thousand are placed in or near plants, or factories. A reasonable indication of whether such vending machines will be profitable is the number of people who work at the surrounding company or companies. The more people there are, the more likely the vending machine is to be profitable. Companies benefit from the presence of vending machines in that company employees may satisfy their cravings for food or drink, and may be more productive as a result.

Unfortunately, many companies are too small for a vending machine operator to justify placing a vending machine in the company offices. Such a company may have so few employees that a vending machine placed in the company offices is not likely to generate sufficient sales.

In addition, there are many other locations that would benefit from the presence of a vending machine, yet are not frequented by enough people so as to justify the presence of a vending machine. Methods are therefore needed to increase the profitability of a vending machine, particularly in those areas that do not otherwise have sufficient consumer traffic.

OVERVIEW

Varying embodiments of the present invention allow an operator of a vending machine, or a vending machine itself, to send promotional messages to potential customers. The promotional messages may encourage people to make purchases at the vending machine. In this way, a vending machine may stimulate sales so that a vending machine location with even a small potential customer base may become a sufficiently profitable location.

With the present invention, companies that were hitherto considered too small for a vending machine, may now have a profitable vending machine installed. These companies may benefit from increased employee satisfaction stemming from the availability of vended items. Vending machine operators may, in turn, benefit from a more diverse set of locations for operating vending machines. Vending machines in traditionally profitable areas may garner even greater profits with the use of promotions.

Varying embodiments of the present invention provide for novel ways of acquiring the contact information of potential customers. In some embodiments, an operator of a vending machine agrees to place a vending machine in a company facility (e.g., in the offices of a small company) provided the operator receives a list of e-mail addresses of company employees. The vending machine operator may then use the e-mail addresses to send promotional messages encouraging sales at the vending machine.

In some embodiments, a vending machine may receive contact information directly. Such a vending machine may solicit contact information during a customer transaction. The vending machine may offer a benefit, such as a free beverage, provided a customer keys in his e-mail address.

Varying embodiments of the present invention also provide for rules as to when and how a vending machine operator may transmit promotional messages. Promotional messages may be limited in terms of content, times of transmission, and frequency. Promotional messages may also be limited to particular recipients who have not opted out from receiving such messages. The rules may allow a company to provide employee contact information while receiving assurances that such contact information

will not be abused, and that any disruption to employees will be minimal. In various embodiments, a company official may screen promotional messages destined for company employees in order to assure that such messages are within the boundaries of appropriate rules.

Varying embodiments of the present invention provide a controller, which may include the owner and/or operator of one or more vending machines, and which may include appropriate servers and other hardware for communicating with such vending machines. Varying embodiments may additionally include one or more vending machines installed in various locations, particularly in the offices of small companies or in other areas of traditionally low consumer traffic. Varying embodiments may additionally include one or more user devices, such as personal computers, personal digital assistants (PDAs), cellular phones, and pagers. The controller may be in communication with the one or more vending machines, and may receive various data, such as sales and inventory data, that may be used to determine promotional messages. The controller may transmit promotional messages to one or more customers of the vending machines by transmitting such messages to the user devices. Included in the promotional messages may be one or more codes that are redeemable for benefits at the one or more vending machines.

Example 1 of an embodiment:

Susan hurriedly walked to the train station on her way to work on a drizzly October morning. She was starting to shiver when she noticed a new vending machine on the street corner in front of her. The vending machine had a large sign above it advertising "Hot Gourmet Coffee, \$1." Susan was only too happy to get a head start on her morning coffee.

Susan approached the vending machine and inserted her dollar. She noticed a message flashing on a display screen of the vending machine. The message read, "Thanks for trying our Gourmet Coffee. We would love to alert you when we get new coffee brews. So just give us your e-mail address and your next coffee is free. We promise to e-mail you no more than once per week, and we promise not to give your e-mail address to anyone else." Susan liked the idea of hearing about the newest coffee brews, and free coffee was always nice, especially free gourmet coffee. So Susan keyed in her e-mail address using a touch screen on the vending machine. She then chose a coffee, and sipped it on the way to the train station. It was quite good.

That evening, as she was checking her e-mail, Susan noticed an e-mail with "Free Gourmet Coffee" in the subject line. She opened the e-mail, where she found the following message, "We hope you enjoyed your coffee this morning. As promised, the next one is on us. Just type in the following code next time you visit the machine: cof9382."

The next morning, Susan had a printed copy of the e-mail in her purse. She again approached the vending machine, typed in the code, and got her free coffee.

Example 2 of an embodiment:

Bob's Crunchy Snack Machine had been installed a few weeks before in the offices of Rudyard and Cunningham Consulting, a company of forty-five employees. The vending machine had generated some initial attention when it was first installed. Since then, sales had begun to drop off. However, Bob's Crunchy Snack Machine was connected to the company network, and had its own e-mail account. The machine housed an on-board computer and rules-based promotion software, which it used to encourage sales. As the next vending restock date approached, the machine decided that it needed to sell of some more inventory in order to generate at least some profit. Therefore, Bob's Crunchy Snack Machine composed an e-mail message and sent it to all company employees. The message said, "Hungry? Come visit Bob's Crunchy Snack Machine right by the elevator. All Crunchy snacks are 50% off for the next two days!!" As employees checked their e-mail over the next day, sales picked up dramatically. True, Bob's Crunchy Snack Machine did not earn as large of a margin on each sale, but it did earn some. When the vending machine route operator arrived two days later, he was able to restock the machine with many more products and to include in greater quantities the products that had sold most rapidly since the last restocking of the vending machine.

Example 3 of an embodiment:

Tom Briscoll was the head of human resources at Liberty Advertising. Liberty Advertising had a large group working on a big advertising campaign for one of its clients, with the campaign scheduled to be launched in the next week. As a result, many had been working very late. Tom wished to show a little appreciation for all the late hours put in. So, one evening, he sent out an e-mail to the company. The e-

mail said, "Thanks to all of you who have been putting in so many hard hours. As a small token of our appreciation, all items in the lobby vending machine will be free after 8:00 PM every day for the next two weeks. Just enter in your e-mail address at the vending machine to get your free items."

Three weeks later, in a sales report from the vending company, Tom was pleased to see that so many items had been taken. He hoped the free food items helped his employees through all the long hours of work. After receiving an invoice from the vending operator, Tom had the director of accounting write a check to the vending operator to reimburse him for all the free products.

Example 4 of an embodiment:

Linda Jones was regional marketing director for Luscious Beverages, a large vending machine operator. Luscious Beverages had installed vending machines in the offices of several different companies. Each company had provided the e-mail address of its Human Resources Director, or equivalent. Linda was in charge of sending e-mail promotions to the various Human Resources Directors. Each director would screen the promotions. If the promotions satisfied company policies, the HR Directors would then forward the messages to the remaining company employees.

One day, Linda composed a message that included a graphic. The caption read, "Take a look at the latest picture of Shaq O'Neal taking a sip of Luscious Grape Juice!!" Linda sent the message to the HR Directors. Most of them took a look and then forwarded the message to company employees. However, one HR Director noted that the graphic occupied a large amount of memory space. He sent a message back to Linda asking if she could use a smaller graphic that did not use so much memory space. Linda obliged, and sent back a message with a smaller, cropped picture of Shaq. The HR Director then forwarded the message to his company employees.

TERMS AND DEFINITIONS

controller n. – an entity that may own, control and/or operate a vending-related business. The functions of the controller may include placing vending machines in various locations (such as in company offices), stocking and restocking the vending machines with inventory, collecting revenue from the vending machines, determining promotional messages to encourage sales at the vending machines, and transmitting the promotional messages to appropriate recipients (e.g., to potential customers of the vending machines). The controller may include: a computer, such as a server; one or more people, such as owners, employees, or vending machine route operators; and capital such as trucks, office space, and so on. Throughout the present application, the term "controller" may be used interchangeably with terms representing only parts or aspects of the controller. For example, "controller" may be used interchangeably with "route operator" or with "vending machine", since a route operator may work for the controller, and a vending machine may be owned by the controller.

operator n. – one or more people who may be employed by the controller and who may interact directly with one or more vending machines managed by the controller. The operator may, for example, restock a vending machine with inventory, collect unsold inventory from a vending machine, collect currency from a vending machine, collect audit data from a vending machine, collect redeemed coupons or certificates from a vending machine, collect sales data from a vending machine, fix problems with a vending machine, install new parts or modules into a vending machine, install a vending machine, move a vending machine, clean a vending machine, and so on. The terms "operator", "route operator", "vending machine route operator", and "controller" may all be used interchangeably.

promotional message n. – a message that promotes sales or other activities at a vending machine, or that otherwise promotes goodwill for the vending machine. A promotional message may take the form of an e-mail message. A promotional message may be transmitted to one or more customers or potential customers of a vending machine. A promotional message may be composed and/or sent by a controller, vending machine, or representative of a company charged with encouraging sales at a vending machine. A promotional message may indicate, for example, the existence of items on sale, a discount to be offered to a recipient, the availability of a new product, and so on.

user n. – a person who transacts or interacts with a vending machine of the present invention. For example, a user may be someone who receives a promotional message from a vending machine, visits the vending machine, enters a promotional code indicated in the message, and who accordingly receives a discounted product. The terms “user”, “customer”, “consumer”, “employee”, and “person” may all be used interchangeably herein.

user device n. – a device with which a user interacts and which may serve as an intermediary between a vending machine and/or controller and the user. A user device may include a personal computer, cellular phone, personal digital assistant (PDA), laptop computer, and so on. A user device may, for example, be connected to a communications network, where it may receive messages from the controller. The user may then peruse these messages via the user device, e.g., by reading the messages on a display screen of the user device.

vending machine n. – an electromechanical device capable of receiving consideration and providing a benefit in return. Examples of consideration include coins, bills, credit card payments, debit card payments, smart card payments, payments from a cell phone, gift certificates, and coupons. In addition, a vending machine may treat as consideration a promotional code, in return for which the vending machine may provide a benefit. A vending machine may also treat as consideration a customer identifier, such as an e-mail or fingerprint, where the vending machine later has the ability to collect from the customer based on the identifier. The benefit provided by a vending machine may include a product or service. Products may include food, beverages, gasoline, toys, electronic downloads, entertainment (e.g., the playing of a music video), and so on. Services may include washing clothes, providing access to the Internet, providing printouts, and so on. A vending machine may possess any degree of preprogrammed intelligence, such as artificial intelligence. Among a vending machine’s possible intelligent abilities may be the ability to recognize people by voice or image, the ability to understand spoken language, the ability to understand written language, the ability to synthesize spoken language, the ability to compose text, the ability to compose motivational text (such as promotional messages advertising products at the vending machine), the ability to recognize patterns in human purchasing behavior, the ability to sense external “traffic” (i.e., people passing by), and the ability to transmit messages to a targeted group of people on a network. The vending machine may incorporate some or all of the functions of the controller, and may be one and the same as the controller, in various embodiments.

SOME BENEFITS

To a vending machine operator

- In various embodiments, a vending machine operator may increase sales at a vending machine by promoting the vending machine to potential customers via e-mail and/or other communication media.
- In various embodiments, a vending machine can market a particular product.
- In various embodiments, a vending machine operator may open up new markets for a vending machine by deriving additional sales from a customer base that would otherwise be too small.

To an employer

- In various embodiments, an employer may benefit by obtaining a vending machine that could not otherwise be profitably placed in the company.
- In various embodiments, an employer may use a vending machine as a convenient and low-cost reward mechanism for its employees, thereby potentially increasing productivity

To a user

- In various embodiments, a user benefits from the ability to receive information about discounts, free products, and other benefits provided at a vending machine. The user may receive such information without having to be proximate to the vending machine.
- In various embodiments, a user may benefit from the ability to transact at a vending machine that could otherwise not be profitably placed in the user’s locality.

DETAILED DESCRIPTION OF THE INVENTION

Some embodiments of the present invention (figure 1) comprise a controller (figure 2) in communication with one or more vending machines (figure 3), and one or more user devices (figure 4). Vending machines may include automated devices that receive payment in the form of cash, credit, and the like, and which dispense benefits in the form of packaged foods, drinks, gasoline, laundry detergent, lottery tickets, and so on. Vending machines may also provide services such as providing access to the Internet, washing a load of laundry, transmitting a fax, and so on. User devices may include personal computers, personal digital assistants (PDAs), cellular phones, pagers, video game consoles, and so on. The controller, vending machines, and user devices may be in communication with one another via a network such as the Internet, the cellular phone network, a local area network, a wireless network, and so on.

Vending Machine Apparatus and System Architecture

Machine Casing/Cabinetry

In some embodiments, suitable machine cabinetry may be constructed from any suitable material, including but not limited to any combination of (1) commercial grade sixteen-gauge steel (e.g. for exterior panels and internal shelving), (2) transparent materials such as glass or Plexiglas (e.g. for item display windows), (3) rubber (e.g. for waterproofing insulation), (4) plastic, and/or (5) aluminum.

Many commercially available machine casings can be adapted to work in accordance with the present invention. For example, in snack machine embodiments, a suitable machine casing may comprise the 129 SnackShop manufactured by Automatic Products International, Ltd. of Saint Paul, Minnesota, which stands at 72" / 1829 mm wide, has a width of 38 7/8" / 988 mm, and a depth of 35" / 889 mm. Other suitable snack machine casings include the A La Carte® machine from Automatic Products, and the GPL SnackVendor model # 159 from Crane Merchandising Systems/ Crane Co. of Stamford, Connecticut.

In beverage machine embodiments, machine casings commercially available from Dixie Narco, Inc. of Williston, South Carolina may be employed. Beverage machine casings may comprise a "cooler" or "glass front" style front panel, featuring a transparent front panel (e.g. glass) enabling customers to see inventory for sale. Alternatively, beverage machine casings may comprise a "bubble front" style front panel, featuring a decorative front panel, typically used to advertise a logo of a product manufacturer commercially interested in the vending machine's operation.

Other embodiments are contemplated as well, including combination snack and beverage vending machine embodiments, such as those available from Crain Co. Further details concerning the suitability of machine casing/cabinetry are well known in the art, and need not be described in further detail herein.

Inventory Storage and Dispensing Mechanisms

Inventory storage and distribution functions of a vending machine configured in accordance with a snack machine embodiment of the present invention may include one or more of: (i) a drive motor, (ii) metal shelves, (iii) a product delivery system (e.g. a chute, product tray, product tray door, etc.), (iv) dual spiral (i.e. double helix) item dispensing rods, (v) convertible (i.e. extendable) shelves (convertible shelves are described more fully in co-pending related application serial number 60/504519, entitled "Apparatus, System, and Method For Configurable Vending Machine Product Zones", which is incorporated by reference herein for all purposes), and/or (vi) a refrigeration unit. In embodiments using the casing of the model 129 SnackShop manufactured by Automatic Products, 3 removable shelves may be employed, together providing for 30 product rows and an inventory capacity of between 185 to 522 commonly vended snack products. Inventory storage and dispensing mechanisms may include mechanisms suitable to "hold" a product until it is claimed by a particular customer. For instance, a customer may reserve a product via a Website. The customer may receive a code at the Website. The vending machine may hold the product until a suitable code is entered into the vending machine, such code recognizable by the vending hardware as a signal to release the reserved item.

Inventory storage and distribution functions of a vending machine configured in accordance with a beverage machine embodiment of the present invention may include one or more of: (i) metal and/or plastic shelving, (ii) item dispensing actuators/motors, (iii) product delivery chutes, and/or (iv) a refrigeration unit.

Further details concerning vending machine inventory storage and dispensing mechanisms are well known in the art, and need not be described in further detail herein.

Payment Processing Mechanisms

The vending machine may also include one or more mechanisms for receiving payment and dispensing change, including a coin acceptor, a bill validator, a card reader (e.g. a magnetic stripe reader) and a change dispenser.

In a manner known in the art, a magnetic stripe card reader may read data on the magnetic stripe of a credit or debit card, and it may cooperate with conventional point-of-sale credit card processing equipment to validate card-based purchases through a conventional transaction authorization network. Suitable card-based transaction processing systems and methods are available from USA Technologies, Inc.

The coin acceptor, bill validator and change dispenser may communicate with a currency storage apparatus (a "hopper") and may comprise conventional devices such as models AE-2400, MC5000, TRC200 by Mars, Inc. of West Chester, Pennsylvania, or CoinCo model 9300-L. The coin acceptor and bill validator may receive and validate currency that is stored by the currency storage apparatus. The change dispenser activates the return of coinage from the currency storage apparatus to the customer where appropriate (e.g. where a customer deposits more currency than is required for a given transaction). Such apparatus may feature Multidrop Bus (MDB) and/or Micromech peripheral capabilities, as is known in the art.

In another embodiment, a vending machine in accordance with the present invention may be configured to receive payment authorization and product selection commands through a wireless device communication network, directly or indirectly, from a customer's wireless device (e.g. a cellular telephone). In such an embodiment, a payment processing mechanism may comprise a cellular transceiver operatively connected to a processor, as described herein. Systems and methods allowing for the selection of and payment for vending machine articles through cellular telephones are provided by USA Technologies, Inc., of Wayne, Pennsylvania. Further, in such an embodiment, a cellular telephone may serve as an input/output device, as described herein.

In another embodiment, a vending machine in accordance with the present invention may contain a keypad or other interface for manual entry. The vending machine may receive payment information via the keypad. For example, a customer may enter a code that is valid for a free product at the vending machine. Alternatively, the customer may enter a financial account identifier through the keypad in order to facilitate payment.

Further details concerning vending machine payment processing mechanisms are well known in the art, and need not be described in further detail herein.

Input/Output Devices

In accordance with the presenting invention, a vending machine may include an input device for receiving input from (i) a customer indicating a product and/or offer selection, (ii) an operator (or agent thereof) during stocking or maintenance of the vending machine, and/or (iii) a customer passing in proximity to the vending machine (e.g., a passive customer input). Also, a vending machine may include one or more output devices for outputting product or offer information to a customer or operator.

Many combinations of input and output devices may be employed in accordance with the present invention. In some embodiments, a vending machine may include more than one input device. For example, vending machine may include an exterior input device for receiving customer input and an interior input device for receiving operator input. In some embodiments, however, the input device provides the dual functionality of receiving input data from both operators and customers. Likewise, a vending machine may comprise more than one output device (e.g. an LCD screen and several LEDs, as described herein). However, in some embodiments, such as those which feature touch screens (described herein), input and output functionality may be provided by a single device.

Many types of input devices are contemplated. Thus, an input device may comprise one or more of (1) a set of alpha-numeric keys for providing input to the vending machine, such as the Programmable Master Menu® Keypad, (2) a selector dial, (3) a set of buttons associated with a respective set of item dispensers, (4) a motion sensor (motion sensors as used for the monitoring of customer traffic and demand are described more fully in related patent 6,324,520, serial number 09/164670, entitled "Method and Apparatus for Collecting and Applying Vending Machine Demand Information", which is incorporated by reference herein for all purposes), (5) a barcode reader, (6) a voice recognition module, (7) a Dual-Tone Multi-Frequency receiver/decoder, (8) a wireless device (e.g. a cellular telephone or wireless Personal

Digital Assistant), and/or (9) any other conventional input device commonly employed by a vending machine designer.

Likewise, many types of output devices are contemplated. For example, an output device may comprise a Liquid Crystal Display (LCD). Alternatively or additionally, an output device may also comprise one or more Light Emitting Diode (LED) displays (e.g. several alphanumeric multi-color or single color LED displays on the shelves of a vending machine associated proximately with each row of product inventory).

In one embodiment, an LED display screen is mounted atop the vending machine (via bolts or other mounting hardware) and is used to communicate offers and other messages (e.g. product advertisements) to prospective customers. A suitable LED display screen for such an embodiment may be housed in an aluminum case having a length of 27.5", a height of 4.25", and a depth of 1.75". Such a display screen may have a display area capable of showing 13 alphanumeric and/or graphical characters. Further, such an LED display screen may comprise a serial computer interface, such as an RJ45/RS232 connector, for communicating with a processor, as described herein. Further still, such an LED display may be capable of outputting text and graphics in several colors (e.g. red, yellow, green, black) regarding current and upcoming promotions.

Further, in some embodiments, an output device comprises a printer. In one embodiment, a printer is configured to print on card stock paper (e.g. 0.06mm to 0.15mm thickness), such as the EPSON EU-T400 Series Kiosk Printer. Further, a printer may be capable of thermal line printing of various alphanumeric and graphical symbols in various font sizes (e.g. ranging from 9 to 24 point) on various types of paper. Additionally, such a printer may communicate with a processor (described herein) via an RS232 / IEEE 12834 and/or bi-directional parallel connection. Such a printer may further comprise a 4KB data buffer.

Additionally, in some embodiments, an output device comprises an audio module, such as an audio speaker, that outputs information to customers audibly.

As stated, in some embodiments, a touch-sensitive screen may be employed to perform both input and output functions. Suitable, commercially available touch screens for use in accordance with the present invention are manufactured by Elo TouchSystems, Inc., of Fremont, California, such as Elo's AccuTouch series touch screens. Such touch screens may comprise: (i) a first (e.g. outer-most) hard-surface screen layer coated with an anti-glare finish, (ii) a second screen layer coated with a transparent-conductive coating, (iii) a third screen layer comprising a glass substrate with a uniform-conductive coating. Further, such touch screens may be configured to detect input within a determined positional accuracy, such as a standard deviation of error less than ± 0.080 -inch (2 mm). The sensitivity resolution of such touch screens may be more than 100,000 touchpoints/in² (15,500 touchpoints/cm²) for a 13-inch touch screen. For such touch screens, the touch activation force required to trigger an input signal to the processor (described herein) via the touch screen is typically 2 to 4 ounces (57 to 113 g). Additionally, touch screens for use in accordance with the present invention may be resistant to environmental stressors such as water, humidity, chemicals, electrostatic energy, and the like. These and other operational details of touch screens (e.g. drive current, signal current, capacitance, open circuit resistance, closed circuit resistance, etc.) are well known in the art and need not be described further herein.

Logic/Control/Processing Apparatus

The components of the vending machine, including the input device, output device, coin acceptor, bill validator, card (e.g. magnetic stripe) reader, change dispenser, currency storage apparatus, and product dispensing mechanism(s) (collectively, the "peripherals") communicate with, and are controlled by, a control system or processor, such as one based on the Intel® Pentium® or Centrino™ series processor. The processor may be in communication with a memory and a communications port (e.g., for communicating with one or more other computers or vending machines). The memory may comprise an appropriate combination of magnetic, optical and/or semiconductor memory, and may include, for example, Random Access Memory (RAM), Read-Only Memory (ROM), a compact disc and/or a hard disk. The memory may comprise or include any type of computer-readable medium. The processor and the memory may each be, for example: (i) located entirely within a single computer or other device; or (ii) connected to each other by a remote communication medium, such as a serial port cable, telephone line or radio frequency transceiver.

A memory may store a program for controlling a processor. The processor performs instructions of the program, and thereby operates in accordance with the present invention, and particularly in accordance with the processes described in detail herein. The program may be stored in a compressed,

uncompiled and/or encrypted format. The program furthermore includes program elements that may be necessary, such as an operating system, a database management system and "device drivers" for allowing the processor to interface with the peripherals. Appropriate program elements are known to those skilled in the art, and need not be described in detail herein.

The term "computer-readable medium" as used herein refers to any medium that participates in providing instructions to a processor for execution. Such a medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media include, for example, optical or magnetic disks, such as memory. Volatile media include dynamic random access memory (DRAM), which typically constitutes the main memory. Transmission media include coaxial cables, copper wire and fiber optics, including the wires that comprise a system bus coupled to the processor. Transmission media may carry acoustic or light waves, such as those generated during radio frequency (RF) and infrared (IR) data communications. Common forms of computer-readable media include, for example, a floppy disk, a flexible disk, hard disk, magnetic tape, any other magnetic medium, a CD-ROM, DVD, any other optical medium, punch cards, paper tape, any other physical medium with patterns of holes, a RAM, a PROM, an EPROM, a FLASH-EEPROM, any other memory chip or cartridge, a carrier wave as described hereinafter, or any other medium from which a computer can read. Various forms of computer readable media may be involved in carrying one or more sequences of one or more instructions to a processor for execution.

According to an embodiment of the present invention, the instructions of the program may be read into a main memory from another computer-readable medium, such as from a ROM. The execution of sequences of the instructions in a program causes the processor to perform the process steps described herein. In alternate embodiments, hard-wired circuitry may be used in place of, or in combination with, software instructions for implementation of the processes of the present invention. Thus, embodiments of the present invention are not limited to any specific combination of hardware and software.

The memory also may store one or more databases. Some or all of the data stored in each database is described herein. The described data represents exemplary information only; those skilled in the art will understand that the number, content, and form of the data can be different from that which is described herein without departing from the spirit and scope of the invention. Further, despite any description of the databases as tabular, relational databases, an object-based model could be used to store and manipulate the data types of the present invention and likewise, object methods or behaviors can be used to implement the processes of the present invention.

Thus, the machine's processing apparatus, in conjunction with the peripherals (e.g. through RS232 connections and/or other suitable connections), manages interactions with the user in accordance with stored business logic, described herein.

Retrofitting Conventional Vending Machines with a Separate Device

In one embodiment, one or more of the processor, the input device(s), RAM, ROM, output device(s) and a data storage device may be included, wholly or partially, in a separate device, such as the e-Port™ by USA Technologies Inc., that is in communication with a vending machine. The separate device may also be in communication with a network such as the Internet.

The e-Port™ is a credit and smart card-accepting unit that controls access to office and MDB vending equipment, and serves as a point of purchase credit card transaction device. The e-Port™ includes an LCD that allows for the display of color graphics, and a touch sensitive input device (touch screen) that allows users to input data to the device. The display may be used to prompt users interactively with, e.g., offers and information about their transaction status.

The separate device may alternatively be a programmed computer running appropriate software for performing the necessary functions described herein. The separate device may be operable to receive input from customers, receive payment from customers, exchange information with a remotely located server and / or display messages to customers (e.g. package offer content). The separate device may be operable to instruct the vending machine that appropriate payment has been received (e.g., via a credit card read by the separate device) and / or that a particular product or products should be dispensed by the vending machine. Further, a separate device may be operable to instruct the vending machine to execute package promotions, price changes, or the like.

Thus, a separate device may be operatively connected to a vending machine to perform the inventive processes described herein. In this manner, conventional vending machines may be retrofitted with such separate devices so as to perform the inventive processes described herein.

Network Embodiments

The present invention can be configured to work in a network environment including a computer that is in communication, via a communications network, with one or more vending machines. The computer may communicate with the vending machines directly or indirectly, via a wired or wireless medium such as the Internet, LAN, WAN or Ethernet, Token Ring, or via any appropriate communications means or combination of communications means. Each of the vending machines may comprise computers, such as those based on the Intel® Pentium® or Centrino™ processor, that are adapted to communicate with the computer. Any number and type of machines may be in communication with the computer.

Communication between the vending machines and the computer, and among the vending machines, may be direct or indirect, such as over the Internet through a Website maintained by computer on a remote server or over an on-line data network including commercial on-line service providers, bulletin board systems and the like. In yet other embodiments, the vending machines may communicate with one another and / or the computer over RF, cable TV, satellite links and the like.

Some, but not all, possible communication networks that may comprise the network or be otherwise part of the system include: a local area network (LAN), a wide area network (WAN), the Internet, a telephone line, a cable line, a radio channel, an optical communications line, and a satellite communications link. Possible communications protocols that may be part of the system include: Ethernet (or IEEE 802.3), SAP, ATP, Bluetooth™, and TCP/IP. Communication may be encrypted to ensure privacy and prevent fraud in any of a variety of ways well known in the art.

Those skilled in the art will understand that vending machines and/or computers in communication with each other need not be continually transmitting to each other. On the contrary, such vending machines and/or computers need only transmit to each other as necessary, and may actually refrain from exchanging data most of the time. For example, a vending machine in communication with another machine via the Internet may not transmit data to the other machine for weeks at a time.

In an embodiment, a server computer may not be necessary and/or preferred. For example, the present invention may, in one or more embodiments, be practiced on a stand-alone vending machine and/or a vending machine in communication only with one or more other vending machines. In such an embodiment, any functions described as performed by the server computer or data described as stored on the server computer may instead be performed by or stored on one or more vending machines.

In other embodiments, a vending machine may be in communication with a remote computer, such as a server, that provides the vending machine with and/or receives from the vending machine, e.g., all or some of the data described herein. Thus, in certain embodiments, the server may comprise certain elements or portions of certain elements such as a data storage device/ memory.

In such an embodiment, the remote computer could be accessible, directly or indirectly, via a second computer (communicating over the Internet or other network) by a customer or operator. Accordingly, a customer or operator of the second computer could communicate with the remote computer via a Web browser. The second computer could, e.g., receive from the remote computer messages described herein as being output by the vending machine, and/or transmit to the remote computer input described herein as being provided to the vending machine. Similarly, various data described herein as received through an input device of a vending machine may be received through a Web browser communicating with a remote server, which in turn communicates with the vending machine. Thus, an operator of the vending machine may have remote polling and reporting capabilities, may be able to transmit new business rules to the vending machine, and the like.

The following are the method steps of one embodiment of the present invention:

Determine a company

The controller may determine a company, such as a law firm, accounting firm, manufacturing company, consulting firm, doctor's office, or any other company. Additionally, a company may include a division of a company, a subsidiary of a company, a spin-off of a company, and so on. A company may include a government agency, nonprofit organization, school, or university. In various embodiments, a company may include any group of people who perform at least some work for a common organization, or who work in the same locale, facility, or complex. In addition, a company may include a group of companies.

In one or more embodiments, the company may possess an office where one or more employees of the company reside at one time or another. An office may include space in a building with desks, chairs, and/or computer terminals. An office may include a factory floor where products are created. An office may include a worksite, such as a mine, a farm, a construction site, a forest where trees are harvested, a distribution center, an airport, or any other physical locale where work is performed.

In various embodiments, the controller may determine a company according to one or more criteria. The criteria may include criteria that, if satisfied, would portend the profitability of a vending machine placed in the company. The criteria may include one or more of:

- The number of employees falls within a desired range
- The average number of customers who visit the company offices per day falls within a desired range
- The number of employees with access to e-mail at work falls within a desired range
- The number of employees at a particular office of the company falls within a desired range. For example, the number of employees at the company's headquarters falls within a desired range.
- The size of a particular office of the company is within a particular range. For example, the number of square feet of a company's headquarters is less than a certain number.
- The typical working hours of employees at the company span a certain range. For example, do employees at the company typically work late? Do employees of the company typically work more than ten hours per day?
- Whether one or more sources of food are available. For example, is a cafeteria available in or near the offices of the company? Are there nearby restaurants? Are there existing vending machines at the company?
- Whether there are certain types of food sources available. For example, are there snack food vending machines, or only drink vending machines?
- Whether one or more sources of water or other drink are available. For example, are there several water fountains or water coolers?
- Are certain types of work performed? Is intense physical labor performed? For example, do employees at the company weld steel, or do they type at computers all day?
- Whether the average temperature at the company falls within a certain range. Alternatively, whether the peak temperature at the company falls within a desired range.
- Whether the average humidity at the company falls within a certain range, or whether the peak humidity falls within a certain range.
- Whether company offices are used by other organizations. For example, are company offices used by a Boy Scout troop for meetings during the evening?
- The location of the company. For example, a vending machine placed at a company near to the controller would be easier to stock and service than would a vending machine placed at a distant company.

For example, if there are not many food sources available at or near a company, then a snack vending machine may be expected to be profitable at the company. If company employees perform intense manual labor, then it may be expected that the employees would frequently become thirsty, and would therefore be likely to buy drinks from a vending machine. If many company employees have e-mail access, then sales at a vending machine may be increased by sending e-mail promotions to the employees, as will be further described herein.

Various embodiments may include receiving information about one or more companies before a company is determined or chosen. The controller may receive information from a number of sources. Sources may include company filings, such as annual reports. Sources may include company Websites. Sources may include directory listings, such as listings in a phone book. Sources may include company employees. For example, a representative of the controller may contact a company employee by phone and ask for information about the company.

In some embodiments, the company may submit information via a Website of the controller. For example, the company may wish to obtain a vending machine from the controller. Accordingly, a company representative may visit the Website of the controller and may provide any information required by the controller in order for the company to be considered as a potential recipient of a vending machine. The company representative may provide such information as the company location, the desired type of vending machine (e.g., snack, beverage), the number of employees, and any other information that may be useful

for the controller in deciding whether to place a vending machine with the company. The controller's Website may contain forms with fields into which the representative is to enter information about the company. Certain fields may contain required information (e.g., information about whether or not the company wants a vending machine) and other fields may contain optional information (e.g., the demographic breakdown of company employees). The Website may additionally or alternatively include check boxes, menus, radio buttons, or other input mechanisms.

In some embodiments, prior to a company representative visiting a Website of the controller, the controller may actively market to companies. For example, the controller may send a brochure to a company advertising the benefits of having a company vending machine. The brochure may direct a company representative to the Website of the controller. The controller may also market by sending email messages or by sending a salesperson to visit the company.

The controller may maintain a database of companies and associated company information. An exemplary such database is the database of figure 9. If or when the controller has an opportunity to place a new vending machine (e.g., the controller has constructed or received a new vending machine), the controller may access its database of companies, determine which company is likely to generate the most profits for the controller, and decide to place the vending machine in the determined company. Of course, many other criteria for selecting a company may also be employed by the controller.

In some embodiments, a company representative may identify one or more people relevant to the interaction between the controller and the company. For example, the company representative may indicate the identity of:

- A company employee who will screen promotions sent by the controller
- A company employee who will be responsible for paying the controller for the use of the vending machine, for a revenue shortfall of the vending machine, or for any other reason
- A company employee who will encourage the use of the vending machine within the company
- A company employee who will be responsible for displaying company bulletins on the vending machine.
- A company employee who will lead a group whose goal it is to make a minimum number of purchases from the vending machine
- A company employee who will provide the controller with contact information for other company employees
- A company employee who will fill or restock the vending machine
- A company employee who will perform maintenance on the vending machine
- A company employee who will contact the controller to make requests for new products, for maintenance to be performed, for the vending machine to be moved, or for various other tasks to be accomplished

The controller may later interact, as appropriate, with the people identified by the company representative. For example, the controller may later forward promotional e-mails to the employee designated to screen the e-mails.

In some embodiments, once a company representative has been in communication with the controller, such as via the controller's Website, the controller may generate an agreement or contract describing a potential relationship between the company and the controller. The agreement may be generated based on information provided to the controller by the company representative. For example, the company representative may indicate a number of employees at the company. The controller may then apply a formula to derive an expected amount of revenue to be made from placing a vending machine at the company. For example, based on the company having fifty employees, the controller may determine that a vending machine placed at the company would be expected to make \$90 per week in revenue. The controller may require, however, that a vending machine receive at least \$100 per week in revenue. Therefore, the controller may determine as part of the contract that the company must pay the controller \$10 per week in order to have the vending machine stationed at the company. Alternatively, the controller may determine as part of the contract that the company must pay the controller the difference between \$100 and the actual amount of revenue received, and need not pay anything if revenue exceeds \$100.

A contract generated by the controller may be displayed on the controller's Website. The company representative may have the ability to view and to sign the contract on the Website. For example, supplying a signature may consist of supplying the initials of the company representative or of supplying an electronic signature. Alternatively, the company representative may print out the contract, sign it physically, and mail it in to an address of the controller. In some embodiments, the company representative may enter in an account number for the company. The account number may be a credit card account number. The company representative may authorize the controller to deduct funds from the company account in accordance with the contract between the company and the controller.

In various embodiments, the controller may determine a location rather than a particular company. The location may be determined based on its proximity to one or more companies. The location may also be determined based on any of the other factors described above. If the location determined by the controller happens to be owned or controlled by a particular company, then the controller may negotiate with the company for the placement of a vending machine at the location.

To supply machines to one or more buildings of an office park, or to every building of an office park, the controller may negotiate with a property manager or property owner for the office park.

Receive from the company a list of employee e-mail addresses

In one or more embodiments, the controller may receive a list of e-mail addresses of company employees. The list may include an e-mail address for all employees, or for a subset of company employees. In addition, if a company employee has multiple e-mail addresses, then the controller may receive one or more of the employee's e-mail addresses.

In some embodiments, a controller may receive other contact information for employees. Such contact information may include desk phone number, home phone number, mobile phone number, pager number, instant messenger handle, chat room handle, Website address, etc. Contact information may also include a postal address, such as a work address, home address, or other address.

In some embodiments, the controller may receive a single piece of information representing contact information for more than one employee. For instance, the controller may receive a list address, such that any e-mail sent to the list address is automatically forwarded to the e-mail addresses of individual employees associated with the particular distribution list (e.g., "marketing group" or "3rd floor employees"). The controller may not, however, be aware of the individual e-mail addresses that form a part of the list.

In various embodiments, the list of e-mail addresses or other employee contact information may facilitate an important function for the controller. The list of e-mail addresses may allow the controller to send promotional messages to the employees. The promotional messages may encourage the employees to transact with a vending machine that the controller intends to place at the company offices. The controller may thereby expect to generate more sales per employee at a vending machine placed inside the company offices than the controller could hope to make without the ability to send e-mail messages to the employees.

Receive from the company a set of criteria required for contacting the employees

In various embodiments, the company may place limits, rules, or restrictions upon when the controller may send messages to the company employees. The restrictions may protect company employees from excessive numbers of e-mails. The restrictions may also discourage the controller from distracting the employees during work hours, e.g., by encouraging the employees to get up from their desks to go to the controller's vending machine. Restrictions may further protect the company's employees from types of messages that may be deemed inappropriate for a work environment.

The following are possible restrictions that may be placed upon the controller with regards to sending messages, such as e-mail messages, to company employees:

- Messages may only be sent during certain hours, or messages may not be sent during certain hours.
- Messages may only be sent during certain days of the week, or messages may not be sent during certain days of the week.
- Messages may only be sent during certain time periods, or messages may not be sent during certain time periods.
- Messages may be sent only to certain employees.
- There may be a limit on the number of messages sent to an employee per unit of time. For example, only one message may be sent to an employee per day.

- There may be a limit on the total number of messages sent out per unit time. For example, no more than five messages may be sent during any given one-hour period. With such a restriction in place, a company may reduce the chance that many employees will congregate in front of a vending machine.
- Messages may be restricted to a certain size or less (e.g., as measured in bits). With this restriction in place, for example, it may be less likely that messages sent by a controller would take up excessive space on employees' computers and/or on company servers.
- Messages may be restricted from containing certain words, such as e.g., common vulgar words.
- Messages may be restricted from containing text or graphics of a violent, mature, or racially insensitive nature.
- Messages may be restricted from containing text or graphics concerning various controversial topics, such as politics, abortion, religion, etc.
- Messages may be restricted to topics related only to one or more vending machines, such as a vending machine placed by the company in the company offices. For example, the controller may be restricted to sending only messages regarding what a given vending machine has in inventory. With such a restriction in place, the controller may be prevented from sending to employees random advertisements of unrelated products.
- Messages may be restricted as to their origin. For example, messages must always originate from a particular sender (e.g., an email address thereof), such as the controller. This restriction may prevent other advertisers from directly contacting the company's employees.
- Messages must be clearly marked as having been sent by the vending machine or by the controller. For example, messages must contain "Vending" as the first word in the subject line of the e-mail, or as the first word of the message body. With this restriction, employees may more readily filter or avoid messages from the vending machine if desired.

The foregoing and other restrictions may be received by the controller via a Website of the controller. For example, a company representative may visit the Website of the controller and may enter in one or more restrictions electronically. There may be a set form for entering restrictions. For instance the company representative may be able to check boxes next to the hours that promotional e-mails are permitted. Alternatively, restrictions may be entered free-form. Additionally, restrictions may be communicated by any other practical means (e.g., by postal mail, facsimile, telephone, etc.)

The foregoing and other restrictions or rules may be stored in a database of the controller and/or of a vending machine. The exemplary database of figure 9 stores rules in association with each company where the controller has, or is contemplating placing a vending machine. Prior to transmitting promotional message to employees of a company, the controller may access a database storing restrictions and determine if it is permissible to send the message given the restrictions.

In various embodiments, a company may provide the controller with proxy e-mail addresses. For example, the company may provide for employee John Doe, whose real e-mail address is *jdoe@company.com*, a proxy e-mail address of *jmx34@company.com*. E-mails sent to a proxy address may be forwarded by a company server to the actual address represented by the proxy. For instance, the controller may send an e-mail to the address *jmx34@company.com*. The server at the company may then automatically associate the address *jmx34@company.com* with *jdoe@company.com* using e.g., a database of real and proxy e-mail addresses. The server at the company may then forward the e-mail to John Doe at his real address of *jdoe@company.com*. The use of proxy e-mail addresses may be safeguard against abuse of e-mail addresses by the controller. If, for example, the controller does begin to sell customer e-mail addresses to other marketers, then the company may simply sever the link between the proxy and the real address. The real addresses may then be protected from unwanted marketing e-mails.

Place a vending machine in proximity to the company offices

The controller may place a vending machine in proximity to the company offices. (Alternatively, a controller might retrofit an existing vending machine located in proximity to the company offices). Exemplary locations for the vending machine may include:

- A lobby of the company offices
- A kitchen or cafeteria of the company offices

- Near an entrance or exit of the company offices
- Near an elevator shaft of the company offices
- A main hallway or corridor of the company offices
- Across the street from the company offices
- In the building in which the company offices are located

In various embodiments, the vending machine may be co-branded with the company. For example, if the vending machine is of a type that serves “Susan’s Snacks” and the company is “Vanadium Enterprises,” then the vending machine may carry the two brands together, e.g., “Susan’s Snacks and Vanadium Enterprises.” Employees of the company may be more trusting of a vending machine that has the company branding on it. For example, employees may trust that personal information will not be abused. Employees may also trust that they will not receive unsolicited marketing messages if they provide their e-mail addresses or other contact information.

When a vending machine is co-branded with the company in which it resides, the vending machine façade may contain color schemes, patterns, signage, and other markings that are hallmarks of the company. For example, if the company at which the vending machine resides has a white and purple logo, then the vending machine façade may also be colored in white and purple. The vending machine may thereby fit in with general décor of the company. The vending machine may therefore be more acceptable, and not viewed as out of place in e.g., an elegant setting. Of course, a vending machine’s façade may also be made to match the colors of surrounding walls or furniture (e.g., a wood-grain surface), even if these colors are not those associated with the company in the public’s mind. Such a consistency would again serve to make the vending machine less obtrusive.

A further advantage of co-branding a vending machine with the company’s logo is that the vending machine may be understood to play a role in the company’s function. For example, a vending machine may post messages for company employees on a display screen. For instance, “remember to get your flu shots today.”

A further advantage of a co-branded vending machine is that employees may be less inclined to try to cheat the vending machine. For instance, if an employee purchases a product on credit, the employee may feel as if he owes money to his company rather than to some unknown vending operator. The person may thereby feel a greater obligation to repay the debt.

A further advantage of co-branded vending machine is that employees may be less inclined to abuse the vending machine by, for example, banging on the vending machine when a product does not immediately fall out.

Determine a promotional message for the vending machine

The controller may determine a promotional message for later transmission to one or more company employees. The promotional message may, in various embodiments, encourage company employees to make a purchase from the vending machine. A promotional message may include information indicating one or more of the following:

- A price of a product at the vending machine
- The occurrence of a reduced price of a product. For example, a promotional message may indicate that a package of potato chips may be purchased for 50% off during the next hour.
- The availability of a package deal. For example, a promotion may indicate that a customer may purchase both a soft drink and snack for only one dollar.
- The availability of a supplementary prize. For example, the message may indicate that a customer may obtain a free ticket to a club with any purchase at a vending machine.
- The availability of various information, such as news information, entertainment, educational information, and so on. For example, the message may indicate that Britney Spears’ new music video is playing on the display screen of the vending machine. As another example, the message may indicate that there is breaking news about an approaching hurricane being shown on the display screen of the vending machine.
- The duration of any discount, special offer, or other promotion. For example, the promotional message may indicate that all carbonated drinks are two for the price of one for the next ten minutes.
- The start or end time of a promotion. For example, a promotion may not take effect until one hour after a message is sent. Thus, a person may receive a promotional message at 3:00 PM that says, Tortilla

Chips are 50% off starting at 4:00 PM. Similarly, a promotional message may indicate the end time of a promotion. For example, a promotional message may indicate that Tortilla chips will be 50% off until the end of the day. In various embodiments, a promotional may end at the time of the next fill. Thus, for example, potato chips may be 60% off until the vending machine is restocked next time. Advantageously, this would allow a promotion to remain in effect only long enough to clear out as much old inventory as possible before a restocking event.

- The availability of a product. For example, a promotional message may indicate that Tiffany's Fine Chocolates are now in stock, that Cokes® are out of stock, or that the stock of potato chips has just been replenished. A promotional message may also offer a benefit that is of limited quantity. Therefore, the promotional message may indicate that only ten promotions are available. For example, "Twinkies® are two for the price of one. However, you better hurry, as there are only eight Twinkies® left in stock."
- An indication of a vending machine. For example, a promotional message may indicate that Snickers® Bars are available at the Mars® Vending Machine. In various embodiments, promotional messages may promote only a single vending machine, or only a small group of vending machines. Thus, there may be only one vending machine at which a person might derive the benefit of a promotion.
- An indication of a location of a vending machine. For example, "the vending machine in the lobby."
- An indication of directions to a vending machine. For example, a message may indicate that an employee should take the elevator to the second floor of his building, and go to his right to find the vending machine.
- An indication of a particular vending machine among several for an employee to visit. For example, an office may contain several vending machines. A promotional e-mail may indicate that an employee should visit a first vending machine rather than a second, because the first still has a particular product in stock. For example, "If you are looking for Rice Bars, visit the vending machine in the kitchen. The vending machine in the lobby is out." A promotional message that steers an employee towards a particular vending machine may help the controller to manage inventory simultaneously at multiple vending machines. One advantage is that a controller can encourage usage such that all vending machines run out of products at approximately the same time. In this way, a fill person may refill all vending machines at once during the same trip.
- Customized information. For example, a message sent to a particular employee may contain the employee's name in the greeting. A message sent to a group of employees of a company may contain the company's name. A message may also make reference to an employee's purchase history or to other known information about the employee. For example, a message might say, "Hey Bob, your favorite snack, Aunt Susan's Honey Butter Cookies, is now twenty percent off!"
- An indication of the other recipients of a promotional message. For example, a promotional message may indicate that thirty other people are receiving the same message. Therefore, the message may indicate that the person should hurry to obtain the promotional benefit before all of the benefits are given away to other recipients of the message.
- Special instructions for a consumer. For example, a promotion might indicate that a consumer may take a first item from a first vending machine, and a second item from a second, adjacent vending machine, for only 75% of the combined price of the two items. A consumer may be unaccustomed to receiving items from two separate vending machines as part of the same transaction. Thus, the promotion might emphasize that the consumer must take a product from each of two or more vending machines. In some embodiments, instructions might indicate that the user is to pay for a transaction at a first vending machine, and to receive a product at a second vending machine.
- A sweepstakes entry. For example, a promotional message may provide a code to a consumer. The promotional message may further indicate to the user to bring the code to a vending machine in order to see whether he has won. The consumer may later visit the vending machine and enter the code. If the consumer has won, then the vending machine may arrange for the consumer to receive a prize. For example, the vending machine may arrange for a check to be sent to the user. An added benefit for the controller is that the consumer may be encouraged to visit the vending machine.
- A gift certificate. For example, a promotional message may include a portion that a person may print out and insert into the vending machine in order to receive products at no cost. The printed portion may, for example, contain a bar code that is readable by the vending machine in order to allow the vending machine to determine an amount associated with the gift certificate. The gift certificate may alternatively consist of one or more codes that may be input to the vending machine in return for benefits, such as free or

discounted products. A gift certificate may be sent by the controller as a reward for frequent purchases, or as an incentive to try a vending machine. A gift certificate may also be paid for by a first user and provided to a second user. For example, if it is someone's birthday, then other employees in an office may chip in to purchase a gift certificate. A representative of the gift-givers may take the aggregated money and insert it into the vending machine. The representative may indicate an identifier for the recipient of the gift certificate, such identifier possibly including an e-mail address. The vending machine may then transmit the gift certificate to the recipient at, e.g., his e-mail address. A gift certificate may be paid for by many others, including a company official, who wishes to reward an employee. Note that a gift certificate may include a note from the givers, such as, "Happy Birthday!" Note that a gift certificate may also be provided in hard copy directly from a vending machine. For example, a giver may insert money, retrieve a printed gift certificate from a vending machine, and physically give it to a recipient. A giver may also insert money and indicate to a vending machine that a gift certificate should be provided to a recipient the next time the recipient transacts at the vending machine.

- An indication of a cross promotion with a third party merchant. For example, a person may receive a gift certificate good at Amazon.com with every purchase of a candy bar at the vending machine. In another example, a person may receive a free candy bar or other vended item in return for buying a gift certificate at Amazon.com.

- An indication of an ability of a vending machine to sell items for third-party merchants. For example, a vending machine may allow a person to traverse the Internet using a control pad attached to the vending machine. A display screen may display Web pages for the person. The person may visit the Websites of on-line merchants and make purchases. Advantageously, the person need not input a credit card number or other financial account number as is traditionally required by an on-line merchant. Rather, a person may insert currency into the vending machine in the amount required to make the purchase. The controller may then transfer an appropriate amount of funds to the on-line merchant. Meanwhile, the on-line merchant may ship the purchased item to an address provided by the user.

- An indication of an entry into a game. In various embodiments, a vending machine may conduct a game. For instance, a customer may make a purchase at a vending machine, after which a game wheel is spun. The game wheel may have various outcomes, one or more of which may result in a benefit such as a free product. Thus, in one or more embodiments, a promotional message may confer a game entry to an employee. The employee may be required to make a purchase in order to receive entry, or he may obtain the entry without any obligation. To enter the game, the employee may bring a code from his promotional message to the vending machine. Alternatively, the employee may enter an identifier whereupon the vending machine may recognize the identifier and conduct the game. Games at vending machines are described more fully in co-pending related application with docket number 03-048, informally entitled "Game Themed Vending Promotions", the contents of which are incorporated by reference herein for all purposes)

- A coupon. For example, the coupon may provide a discount for purchases made at the vending machine.

- An indication of a volume discount. For example, a promotional message may indicate that a free soda is available with the purchase of eight sodas. As another example, a promotional message may indicate that eleven cans of soda may be had for \$5, whereas normally only ten cans might be had for \$5.

- An indication of an "all you can eat" promotion. For example, for a fixed price a person may obtain as many snack items as desired. The person may, however, be constrained by certain restrictions. For example, the person can take as many snack items as he wants for the next week, so long as he takes no more than one per hour.

- An indication of a membership-type promotion. In such a promotion, a person might pay an upfront fee to become a "member". As a member, the person may have the privilege of getting a discount on items purchased at the vending machine for the duration of the membership period.

- An indication of a commission based sales system. In such a system, a first person may be encouraged to bring others to transact at a vending machine. The first person may then earn benefits for every transaction made by the others at the vending machine. The first person may also earn benefits for still other people brought to the vending machine by the people the first person has brought. A person may thereby be encouraged to bring as many people as possible to transact at a vending machine.

- An indication of a status of a subscription. In various embodiments, a user may purchase a "subscription" to a vending machine. A subscription may allow a user to pay for a number of items

upfront, with the items to be obtained over a period of time. For example, a user may purchase a subscription that allows him to obtain one soda per week for the next ten weeks. The advantage to the user of buying a subscription is that he may receive a discount over the price of buying the items individually. The advantage to the controller is that the user has committed in advance to making multiple purchases. In any event, a promotional message may indicate the status of a subscription by, for instance, indicating the number of items of the subscription left to be redeemed. For example, a promotional message may indicate that a user still has four items in the subscription left to be redeemed. A promotional message may also warn a customer that he must pick up a certain item within a certain time period, or he will no longer be able to. For instance, if a customer has subscribed to receiving one soda per week, the customer may be unable to receive one of his sodas if a given week passes without any redemptions on his part.

The promotional message may be determined based on various triggers. Among the possible triggers:

- Sales of the vending machine up to a certain point in time have not met with expectations. Thus, a promotional message might be intended to boost sales.
- The vending machine is scheduled to be restocked within a predetermined amount of time. Thus, a promotional message might encourage the sale of as many items as possible prior to the restocking.
- The vending machine has been incorporated with a new product or feature. A promotional message may then inform the recipients of the new product or feature. An exemplary new feature might be a credit card acceptor, or a new price for a product.
- The vending machine has just been restocked. An exemplary promotional message might indicate that the vending machine is full of products once again.
- The location of the vending machine has changed. In this case, a promotional message might inform recipients of the new location.
- There has been a new occurrence with the vending machine, where the new occurrence is of interest to a particular employee. For example, a promotional message may be sent to the employee when the price of his favorite drink goes below a predetermined level.
- It is a regularly scheduled time for a promotional message. For example, every Monday at 5:00 PM, the controller may send out a promotional message.
- It has been determined that certain hours of the day have lower sales than others. Thus, a promotional message may encourage sales during these hours of traditionally lower sales by offering a benefit, such as a discount, during these hours.
- An employee has been a good customer of the vending machine. For example, the controller may transmit a promotional message to an employee who has made more than a predetermined number of purchases at the vending machine, who has had greater than a predetermined response rate to prior promotions, who has agreed to receive promotional messages with at least a predetermined frequency, who has spent more than a predetermined amount at the vending machine, who has encouraged a predetermined number of friends to transact with the vending machine, or who has met any other criteria. A promotional message sent to such an employee may give the employee a large and easily apparent benefit. For example, the message may offer to sell the employee a Kit Kat® for ten cents rather than for the usual one dollar. The employee's redemption of the benefit may even result in a loss for the controller. However, providing the employee with the benefit may encourage the employee to remain a good customer. For example, the employee may wish to remain on the mailing list of the controller because of the prospect of periodically receiving offers with a large and easily apparent benefit. The employee may also share his good fortune with friends, thereby encouraging them to remain on, or to join the promotional mailing list. Furthermore, although the controller may suffer a loss on the benefit provided, the controller may provide as a benefit a product that was not likely to sell before the next restocking, so that the controller's loss does not include the opportunity cost of not having sold the product at full price to someone else.
- The number of a particular product in stock exceeds a certain threshold. The controller may therefore want to encourage further sales of the product.
- The number of a category of products in stock exceeds a certain threshold. For example, there are more than fifty beverages in stock.
- The total number of products in stock exceeds a certain threshold. For example, there are more than four hundred total items in the vending machine.
- A holiday or other special event has occurred or will occur. For example, during Halloween, people may, on their own, purchase large quantities of candy. Thus, people may tend not to frequent a vending

machine as often because they have access to other large supplies of candy. Thus, prior to Halloween, a vending machine may transmit promotional messages designed to encourage the purchase of candy. The prices of candy may be made so attractive that people decide it is worth buying from the vending machine rather than from grocery stores. Additionally, the promotional message may encourage bulk purchases of candy so that people may supply all of their Halloween needs at the vending machine. For example, a vending machine may send out a promotion advertising twenty candy items for only \$5. In any event, even if people do purchase candy from grocery stores, people may still be willing to buy candy at work if, for example, their supplies of candy are at home and the candy at work is cheap. A determination of whether to encourage sales at a vending machine during certain dates or times of the year may be made automatically by the vending machine (e.g., with pre-stored rules of when to conduct promotions), automatically by the controller, at the discretion of a human representative of the controller, or at the discretion of a company representative, such as a human resources director.

In various embodiments, a promotional message may have no particular trigger other than, e.g., the controller believes such a message will attract more customers or lead to greater profits at the vending machine. A promotional message may also be written as a test promotion. If the promotional message is successful in increasing profits at a first vending machine, then the same message may be used to promote sales at other vending machines. The use of test promotions, and the propagation of successful test promotions is more fully described in U.S. Patent No. 6230150 B1, entitled "Vending Machine Evaluation Network" which issued on May 8, 2001, and which is incorporated herein by reference for all purposes.

In various embodiments, a promotional message may be determined based on employee preferences. For example, one or more employees may have indicated their preferred foods, beverages, or other products using input devices of the vending machine, or using the Website of the controller. Employees may also have implied their preferences by having frequently purchased a particular product. The vending machine or controller may then create a promotion based on one or more employee's preferences. For example, the controller may indicate that an employee's favorite item is now 20% off, or that now the vending machine has stocked twice as many of the employee's favorite item, or that a new item similar to the employee's favorite item is now in stock.

A vending machine may track a customer's purchasing habits and may create a profile for the customer that details such habits. In some cases, a customer's behavior may appear to deviate from his habits. For example, a customer may normally purchase five candy bars per week. However, during one particular Thursday, the customer may not yet have purchased any candy bars. The vending machine and/or controller may accordingly send a promotional message based upon the customer's deviation from habit. For example, the message may say, "Hey Bob, we noticed you haven't bought any candy bars this week? Is everything o.k.?" A message may also offer an additional incentive to encourage a customer to stick to his usual habits. For example, a message to a habitual purchaser of sodas may say, "Don't forget to buy a soda today. Use the code "G4-H5-I2" to get a 20% discount on your purchase."

In various embodiments, a promotion is determined based on the availability of products. For example, if a vending machine is out of orange sodas, then the vending machine may avoid promoting orange sodas. A vending machine may avoid promoting a particular product even if there are relatively few of the products left. Thus, a vending machine may determine the availability of a product, and determine a promotion, including determining whether or not to promote, based on the availability of the product.

In various embodiments, a promotion is determined based on the cost of products. For example, a promotion might be designed to promote products with low cost. In various embodiments, a promotion might promote products with high margin. In various embodiments, a promotion might promote products based on sales rate. For instance, products with low sales rates are promoted.

In various embodiments, a promotional message may be determined as part of a campaign of promotional messages. For example, the controller may determine a goal to accomplish at a vending machine, and may transmit a sequence of promotional messages until the goal has been accomplished. An exemplary goal may be that the controller wishes to sell all the Kit Kats® in a vending machine prior to a restocking of the machine which is to occur at the end of the day. The controller may therefore send out a

first promotional message. If after some period of time, the controller judges that the first promotional message is not sufficient to allow the controller to meet its goals (e.g., only a few Kit Kats® have sold since the transmission of the first promotional message), then the controller may send a second promotional message. Once again, if the controller judges that the second promotional message is not sufficient to allow the controller to meet its goals, then the controller may send out a third promotional message. The process may continue indefinitely until e.g., the goal has been met, the goal can no longer be met (e.g., the restocking time has already arrived), until the controller has reached a limit as to the number of promotional messages that it is allowed to send, and so on.

One aspect of conducting a promotional campaign is that a controller may finely influence sales of a product and/or the redemption of a benefit so that there are neither too few sales, nor too many consumers who desire to make purchases but cannot, e.g., since products have run out already. For example, if the controller wished to clear the inventory of ten Kit Kats® in a vending machine, then the controller could conceivably send a promotional message to all two hundred people in a company, advertising Kit Kats® for 50% off. However, if more than ten of the two hundred people wished to buy a Kit Kat®, then the eleventh person to reach the vending machine and every person thereafter would be disappointed. Therefore, the controller may send each promotional message to a small enough number of people that there are unlikely to be too many people wanting to partake of the promotion. If, after some period of time, the controller has not met its goals, then the controller may then send out another promotional message to again, a relatively small number of people.

One aspect of conducting a promotional campaign is that the controller may conduct successive promotions in a way that the promotions are non-overlapping in time. For example, a first promotional message may indicate that beverages are two for one until 1:00 PM today. A second promotional message may indicate that beverages are two for one from 1:00 PM to 3:00 PM. A third may indicate that beverages are three for one from 3:00 PM to 5:00 PM. Therefore, the controller need not necessarily worry about recipients of the first promotional message trying to partake of the promotion at 4:00 PM, thereby potentially depleting the inventory used as a benefit and depriving recipients of the second promotional message from the ability of partaking of the promotion. As described herein, one way to limit the duration of a promotion is to require that users/employees enter codes at a vending machine in order to partake of a promotion. The codes may be transmitted to the users originally in a promotional message. However, the vending machine may accept the codes only for a predetermined amount of time. Therefore, recipients of a first promotional message can be limited to partaking of the promotion during a first time period, recipients of a second promotional message can be limited to partaking during a second time period, and so on.

Of course, in various embodiments, promotions in a promotional campaign may apply in overlapping time periods. For example, a recipient of a first message may receive a valid code that may be entered into a vending machine from 1:00 PM to 3:00 PM in order to receive a benefit. A recipient of a second message may receive a valid code that may be entered into a vending machine from 2:00 PM to 4:00 PM in order to receive a benefit. A controller may determine, for example, that it has enough information by 2:00 about a promotion that is being offered until 3:00, that it may go ahead with a second promotion even though the second promotion will overlap in time with the first.

One aspect of conducting a promotional campaign is that successive promotional messages may offer escalating benefits. For example, a first promotional message may offer 10% off on all cookie snacks. If cookie snacks do not sell out during the time period allowed for partaking of the first promotion, then a second promotional message offering 20% off on all cookie snacks may be sent. The following promotional message may offer 40% off, and so on.

The benefits offered in a promotional campaign may also be varied in order to attempt to maximize profits from selling one or more products, while still selling all of the products. For example, a first promotional message may offer a 10% discount on Kit Kats®. If after a time period during which the discount applies, there are still a large number of Kit Kats® in stock, then the second promotional message may offer a larger discount, such as 30%. If many people then purchase Kit Kats® at the 30% discount rate, the controller may, in its third promotional message, make the discount only 20%, so as to derive more profits on sales of the remaining Kit Kats®. Thus, if particular goals are not met from a first promotion offered, a second promotion may be offered with greater benefits. If, however, particular goals are met with a first promotion offered, a second promotion may be offered with lesser benefits. In general, a benefit offered in a promotional campaign, or in any promotion, may depend on the number of an item remaining in inventory, the time until the item's restocking (or until some other target point in time, such as

a product's expiration or perish date), the success of prior promotions, and/or the anticipated success of a promotion being considered.

In various embodiments, the promotional message may be determined by the controller. In other embodiments, the promotional message may be determined by the vending machine. For example, the vending machine may take an inventory of its own stock, and may send out a promotional message indicating how many drinks are left. Promotional text messages may be stored in a database in association with inventory conditions. For example, if total machine inventory is greater than one hundred fifty units, a vending machine may be configured to output promotional message #17 from the database. Such a message might advertise 10% off any transaction occurring between 5:00 and 8:00 pm, in which the code "YL52" is entered.

As another example, the vending machine may autonomously determine prices for its products. When the vending machine determines a new price for a product, the vending machine may determine a promotional message that incorporates an indication of the new price. The use of inventory data and other variables as price determinants is more fully described in copending U.S. Patent Application No. 08/947798, entitled "Method and apparatus for dynamically managing vending machine inventory prices", which was filed on October 9, 1997, and which is incorporated herein by reference for all purposes. The use of inventory data and other variables as price determinants is further described in copending U.S. Patent Application No. 60/511875, entitled "Method and apparatus for dynamically managing vending machine inventory prices", which was filed on October 16, 2003, and which is incorporated herein by reference for all purposes.

In some embodiments, a promotional message is determined by an employee or official of the company. For example, a promotional message may be determined by the Human Resources Director of the company. A company employee or official may have an interest in promoting the vending machine for a number of reasons. In some embodiments, the company may be responsible for paying the controller if certain sales targets are not met at the vending machine. Therefore, the company might have an interest in encouraging its employees to make purchases at the vending machine. In some embodiments, the company may face the prospect of losing the vending machine if certain sales targets are not met. Therefore, in order to keep the vending machine, the company may encourage employees to make purchases.

In various embodiments, a promotional message may be displayed on a display screen of the vending machine. The promotional message may thereby be in view of anyone who passes the vending machine, and especially of anyone who makes a purchase at the vending machine. If a company wishes to display a promotional message on the vending machine, then a company official may visit the Website of the controller. The company official may then indicate a message and upload any desired graphics. The company official may indicate the times and dates during which the message is to be displayed. The controller may then transmit the message via a network connection to the vending machine, and the vending machine may display the message at the appropriate time. The message may be a promotional message for the vending machine. Alternatively, the message may be a general reminder (e.g., of an upcoming meeting), an upcoming social event, a reminder to submit checks for reimbursement, a reminder to turn in time sheets, and so on. A message displayed on a vending machine may additionally include a congratulatory message (e.g., if it is an employee's birthday or if an employee has just had a baby), a message of praise (e.g., for an employee or group of employees that has done good work), or any other message of relevance to a company.

In some embodiments, the company may wish to reward employees for hard work, staying late, or for other efforts. The company may provide, as the reward, free or discounted products at the vending machine. The company may therefore encourage employees to visit the vending machine in order to receive their reward. For any product provided as a reward (e.g., for free), the company may reimburse the controller. In one example, a company official may wish to reward employees who work late. So the official may send out a message to all company employees, indicating that any employee staying after 7:00 PM may receive a free product at the vending machine. The e-mail may include a code, which may be redeemed for the free product after 7:00 PM. Additionally, each employee may get a different code, each code redeemable only once. In this way, employees are prevented from receiving more than one free item. In another example, a supervisor may wish to reward an employee designated as "employee of the month." The supervisor may accordingly have the controller provide the employee with five free sodas over the course of a month. The supervisor may later reimburse the controller.

In some embodiments, the controller may monitor employee work habits. For example, the company may authorize the controller to monitor the state of an employee's computer. The controller may monitor actual productive work accomplished versus leisure activities such as Web surfing or Solitaire. Based on the monitored work habits, the controller may provide the employee with a benefit at the vending machine. For example, if an employee has gone all week without surfing the Web, then the employee may be provided with five free sodas at the vending machine. Additionally, or alternatively, the controller may report employee work habits to the company.

In embodiments where the controller, vending machine, or other party determines a promotional message, the message may be filtered through one or more company employees or officials before it is sent to its intended recipient(s). For example, a promotional message may be composed by the controller, and then transmitted the Human Resources Director of the company. The Human Resources director may then read the message and check that the message meets appropriate criteria (e.g., contains appropriate language). If the Human Resources Director is satisfied with the message, then he may forward the message to one or more other company employees who are its intended recipients. Alternatively, he may express approval of the message, after which the controller may transmit the message directly to its intended recipients.

Transmit the promotional message to one or more employee e-mail addresses in accordance with the set of criteria

Once the promotional message has been determined, and, in various embodiments, approved by a company employee, the message may be transmitted to its intended recipients (e.g., such that it may be output on a user device). Such transmission may occur in accordance with any restrictions and other criteria specified by the company, as described above.

In various embodiments, the message may include a code, such as a random or pseudo random sequence of alphanumeric characters. An exemplary code might read, "3gc68sl3". The code might also include other types of codes, such as a bar code. The code may be required by the vending machine in order for the recipient of the message to partake of the promotion. For example, if a message indicates a promotion of 50% off the price of potato chips, the recipient might be required to input the code at the vending machine in order to actually purchase the potato chips for 50% off.

In various embodiments, a code may consist of sequence of characters or character combinations that appear on keys at a vending machine. For example, a vending machine may have keys labeled "A1", "A2", "C3", and so on. These labels may reference a row and column from which a purchaser would typically select a snack. For instance, "C3" may refer to the snack in the third row and third column of the vending machine. Thus, a code may consist of sequences of such character combinations, such as "A2-D5-F3". In some cases, a vending machine may contain only numeric keys. In such cases, codes may consist of just sequences of numerals.

The use of a code in promotional messages may allow a vending machine to offer promotions to only a targeted group of recipients. For example, a vending machine in a building housing several companies may send a promotional message to only one of the companies, the promotional message including a code. By inputting the code at the vending machine, the recipients of the message may be entitled to receive a free pack of gum with any other product purchased. Therefore, the vending machine may give away packs of gum to employees of one company without having to give the same benefit to employees of other companies in the building. A vending machine may send a targeted promotion to as few as one person. By using promotional codes, the controller or vending machine may also limit any potential downside of a promotion. For example, a promotion in which the vending machine is giving away a product for ten cents might result in a financial loss on each product given away. However, by limiting the number of promotional codes given out, and/or by limiting the number of times a promotional code may be used, the vending machine may limit the financial losses from giving away products.

Furthermore, each code may become invalid after a certain number of uses. For example, each code may become invalid after only one use. Therefore, a first recipient of a code may not be able to simply distribute the code to a number of friends in order to allow them to partake of a benefit meant only for the first recipient. To facilitate a limited number of uses for codes, the vending machine may maintain an internal database of valid codes, such as the database of figure 8. Each time a code is inputted, the vending machine may determine whether it is a valid code. If the code is valid, then the vending machine may allow the current customer to receive a benefit associated with the code. The vending machine may

then update the code in the database by e.g., recording one more use for the code. If the code has been used its maximum number of times, then the vending machine may designate the code as invalid in the database, thereby preventing its further use.

Additionally, the controller may send a unique code to each recipient of a promotional message. The controller may track which recipient received which code. The vending machine may further transmit to the controller the particular codes that were inputted into the vending machine. The controller may thereby track the purchases made by a particular recipient. For example, if the controller sent a particular code to John Hamilton, then, if the same code is later received at a vending machine in conjunction with a transaction, the controller may infer that John Hamilton made the transaction. The controller may use the tracking of a consumer's purchases as a means to build up knowledge of the person's preferences and purchasing habits. For example, the controller may maintain and periodically update a user database such as the database of figure 6. The database may include preferred products for the user, frequency of purchase, average transaction amount, preferred times of purchase, preferred days of purchase (e.g., Mondays), and so on. The controller may use knowledge of a person's purchasing preferences and purchasing habits to tailor promotional messages to the person. For instance, promotional messages may highlight certain preferred products, or may be sent only during days when the user normally transacts with the vending machine.

In various embodiments, the controller or vending machine may determine a group of people all or substantially all of who live in, work in, or otherwise frequent the geographic area proximate to the vending machine. The controller may transmit the promotional message to only this group of people. In this way, the controller does not needlessly send messages to those who are not likely to pass by or near the vending machine. The controller may determine the geographic areas a person frequents by:

- Inference from their status as an employee of a company. For instance, if an employer has provided a person's name as an employee, and the controller knows the location of the employer, then the controller may infer that the person frequents the same location.
- Receiving geographic information from the person at a vending machine. For example, if the person transacts at a vending machine, then the controller may assume that the person generally frequents the geographic area in which the vending machine is located. The person may provide an identity and contact information during the transaction, so that the vending machine may associate the identity and contact information with a geographic location for the person.
- Receiving geographic information from the person at the Website of the controller. For example, the person may visit the Website of the controller and indicate his identity as well as the places he lives, works, and otherwise frequents.
- Receive geographic information from the person via e-mail or other communication means.

Perform a transaction at the vending machine

Once a promotional message has been transmitted, the vending machine may engage in a transaction in which the vending machine provides a promotion described in the promotional message. For example, the vending machine may provide two products for the price of one, or may provide a 20% discount, or may provide a coupon good for a discount on a future purchase.

The transaction at the vending machine may include receiving a code, and providing a benefit based on the code. The vending machine may contain one or more input devices, such as buttons, keypads, touch screens, or remote control devices. A consumer may use such input devices to input the code. Once the vending machine has received the code, the vending machine may provide any benefit that is associated with the code. The vending machine may also update a database of codes (figure 8 or figure 7), indicating one more use of a code, or indicating that a code may no longer be used, as described above.

The transaction at the vending machine may also include receiving a customer identifier. Customer identifiers may include customer initials, a customer e-mail address, a customer telephone number, the customer's birthday, the customer's room number, and so on. The identifier may already be associated with the customer through a database stored by the controller. The controller may associate the customer identifier with a customer account, such as with a customer credit card number. Therefore, when a customer enters an identifier during a transaction, the controller may access the customer's account, and may bill the account for any portion of the transaction requiring payment. Customer accounts are discussed further below in the "Alternate Methods and Uses Section."

During or following a period in which a promotion is in effect, the controller may evaluate the effectiveness of the promotion. For example, the controller may determine, based on transactions performed at the vending machine, and based on the codes received during such transactions, the response rate of employees to a promotion. For instance, suppose the controller sent out forty e-mail messages, each containing a distinct promotional code related to a single promotion in which all diet beverages were 50% off. Over the course of the next day (the time period during which the promotion was in effect), suppose that eighteen transactions were conducted at the vending machine in which one of the promotional codes was inputted and in which a consumer was provided with a diet beverage at 50% off. Then, the controller may evaluate the effectiveness of the promotion by dividing eighteen (the number of transactions pertaining to the promotion) by forty (the total number of promotional messages sent out), to reach a percentage of 45%. The controller may judge a promotion effective, for example, if the number of related transactions as a percentage of the total number of messages sent out surpasses a predetermined threshold. The controller may have many other criteria for judging whether a promotional message was successful. For example, did a message result in the clearing out the inventory of a particular product or did a promotional message bring in two customers who had not made purchases in the past month? For instance, the controller may track which customers are sent which promotional codes. The controller may recognize a customer who has not made a purchase in the past month by recognizing that the vending machine has not received any code sent to that customer in the past month. Other criteria may include whether the promotional message exposed twenty people to a new product, or whether the promotional message accomplished some other goal? The controller may track and record the success of various promotions using a database such as the promotional message database of figure 7.

Based on the effectiveness of a promotional message, the controller may determine a promotional message to use in the future. For example, if a promotional message was judged successful, then the controller may use similar wording, the promise of similar benefits, or other similar tactics in a future promotional message. A promotional message may also be deemed successful based on the way in which its recipients were chosen by the controller. Thus, the controller may employ similar methods of choosing recipients in the future. For example, the controller may target the message to a similar demographic group, to a group consisting of a similar type of employee (e.g., welders), and so on.

If a promotional message is deemed ineffective, then the controller may determine future promotional messages based in part, on what not to do, as learned from the first promotional message.

In various embodiments, a customer at a vending machine may be asked to identify himself any time he transacts with, or even passes by the vending machine. For example, the customer may be encouraged to enter into the vending machine a four-digit code that serves as a unique identifier for the customer. By identifying himself during any transaction at a vending machine, even ones where he does not receive a benefit, the customer may allow the controller to develop a better profile of the customer, including preferred products, preferred times to purchase products, and so on. One incentive for the customer to identify himself during every transaction may be that he will receive more tailored and appropriate promotions from the controller. For example, the customer may receive promotions promising discounts on products he frequently purchases versus promotions on products he does not want.

The controller may even provide the customer with a benefit for providing an identifier at the vending machine. For example, the controller may promise the customer a good promotional message to be sent to the customer later in the day if the customer enters his identifier. For instance, by entering the identifying code "1960", the customer may later receive an e-mail in which he is offered two products for the price of one.

The vending machine may identify a customer in a number of ways. As described, the customer may enter a code that serves as a unique identifier for the customer. The code may be, e.g., a sequence of alphanumeric characters chosen by the customer or the vending machine. The code may be a code that had been assigned to the customer already, and is therefore known by the vending machine or controller to correspond to the customer. The vending machine may also identify the customer through the swipe of a credit card or other card with an electromagnetic signature. For example, the vending machine may identify the customer by sensing a prox card. Such cards are often used to gain access to a building with an electronically controlled lock on a door. The prox card, when placed in proximity to a reader, may trigger the lock to release, allowing access. A vending machine may detect a prox card in a manner similar to that used at doorways. The vending machine may identify a customer via an electromagnetic transmission from a customer device, such as a cell phone, watch, or personal digital assistant. The vending machine may

additionally identify the customer through a fingerprint, through voice analysis, through retinal scan, or through facial recognition. The vending machine may recognize a customer passively. In other words, the vending machine may recognize a customer without the customer actively attempting to identify himself to the vending machine. Such a passive recognition system may include facial recognition, or the automatic transmission by a user device to the vending machine of an identifying signal.

One or more embodiments therefore include a method for associating a customer with an identifier, receiving the customer identifier at a vending machine, updating a customer profile for the customer based on his interaction with the vending machine, determining a promotional message based on the updated profile, and transmitting the promotional message to the customer. The method may further include offering the customer a benefit in return for his providing the customer identifier.

Of course, a vending machine may provide promotions even to those who have not received a promotional message. For example, the controller may send a promotional message to the employees of a first company advertising a 40% discount on all items in a vending machine. As it happens, an employee of a second company may stop by the vending machine and make a purchase, even though he did not receive the promotional message. However, the employee of the second company may still receive the discount.

Receive an indication that an employee wishes to opt out of the e-mail list

In one or more embodiments, one or more employees of a company may wish to avoid receiving promotional messages from the controller. For example, the employee may not like food from vending machines and/or may not want to be bothered with extra e-mails. Thus, in one or more embodiments, an employee may indicate that he does not want to receive further promotional messages from the controller. The employee may, for example, reply to a promotional message with a certain key phrase, such as "opt out" in the subject line of his reply. The employee may also visit a Website of the controller. For example, the employee may click on a link to a Website embedded in a promotional message. At the Website of the controller, the employee may type in his e-mail address. The controller may then remove the typed in e-mail address from the promotional mailing list. In some embodiments, the employee may indicate to a company official, such as the Human Resources Director, that he wishes to be removed from the promotional mailing list. The company official may then remove the employee's address from a promotional e-mail list. Alternatively, the Human Resources Director may contact the controller and ask the controller to remove the employee from the promotional mailing list.

In embodiments where the vending machine directly sends promotional messages, a company employee may visit the vending machine and key in his e-mail address or other identifier, after which he may indicate he no longer wishes to receive messages. For example, the employee may touch an area of a touch screen on the vending machine that says, "Don't send me any more messages". An employee or company official may also contact the controller, who may then contact the vending machine and ask the vending machine to stop sending promotional messages to a particular employee.

In one or more embodiments, the controller may require that a minimum number of employees be available to receive promotional messages. For example, the controller may require that at least fifty employees, or that at least 70% of the employees receive promotional messages through a promotional mailing list. One reason for requiring a minimum number of employees to be available to receive promotional messages is that the controller may rely on such messages to bring the number of transactions at the vending machine to a desirable level. Without the ability to send such messages, the vending machine may get so little customer traffic as to be unprofitable. Thus, without the ability to send promotional messages to a threshold number of employees, the controller may not place a vending machine at a particular location in the first place.

Therefore, in various embodiments, the controller may allow an employee to opt out from receiving promotional messages provided that a predetermined minimum number of employees still remain on a promotional mailing list. For example, if the controller requires at least fifty employees, and there are currently fifty-two on a mailing list, then the controller may allow up to two employees to opt out of the mailing list. However, in some embodiments, if there are only fifty employees, then a new employee must join the list if one is to opt out.

In various embodiments, the controller may accept fewer than an initially required number of employees on a mailing list, provided the controller may increase the number of promotional messages that may be sent to the remaining employees. For example, the controller may be limited to sending one

promotional message per day to each employee on a promotional mailing list, provided there are at least fifty employees. However, if fewer than fifty employees are to remain on the list, then the controller may be permitted to send two promotional e-mail messages per day to the remaining employees.

The number of employees required to be on a promotional mailing list may vary dynamically in response to a number of factors. These factors may include:

- Recent sales at the vending machine. For example, the more products sold in the past week, the fewer employees are required to remain on a promotional mailing list. Presumably, with favorable sales rates, a controller does not need to actively promote to as many people in order to maintain the profitability of a vending machine.
- The current margins on products sold at the vending machine. For example, if the controller must pay higher prices to buy its products wholesale, thus squeezing margins, the controller may require more employees to be on a promotional mailing list in order to increase the sales rate of products at the vending machine.
- The number of employees at the company. For example, if there are more employees at the company, then fewer may be required to be on a promotional mailing list, as presumably sales will naturally increase due to the proximity of more people.
- The season. For example, during the winter, relatively few employees may be required on a promotional mailing list for a coffee vending machine, as presumably they would buy from it anyway. However, during the summer, more employees may be required on the promotional mailing list.

In various embodiments, rather than opting out completely, an employee or other consumer may indicate that he wishes to alter the frequency with which he receives promotional messages. For example, the employee may indicate that he wishes to receive messages only once per week rather than twice per week. An employee may additionally alter any other parameter for when messages are sent to him. For example, the employee may indicate a day of the week on which messages are to be sent, a time of day during which messages are to be sent, a maximum length of a message, what should be in the subject line of the message, what types of promotions should be included in the message, and so on. In various embodiments, an employee or consumer may wish to increase the frequency with which he receives messages.

In various embodiments, employees may be permitted to opt out from a mailing list as desired, or with minimal restriction. However, if the number of employees on the mailing list falls below a predetermined threshold, then the controller may send a warning signal, such as a warning message, to one or more employees. The message may indicate that there are too few employees remaining on the list, or that there is danger that too few employees will remain on the list in the near future. The message may indicate possible consequences of there being too few employees. For example, the message may indicate that the company may lose the vending machine if too few employees remain on the mailing list. A recipient of the message, such as a human resources director, may encourage employees to remain on the mailing list, or may encourage new employees to sign up. Employees may also decide not to withdraw from the mailing list upon seeing the message from the controller.

Determine an end to a sales period

A sales period may be any arbitrarily determined period of time, such as a week from Saturday to Sunday, a month consisting of a particular calendar month, or a fill period consisting of e.g., a three-day period from Monday to Wednesday. A sales period may be a period of time over which the controller or vending machine evaluates the performance of the vending machine. The performance may be evaluated using such metrics as revenue, profit, number of transactions, number of customers, amount of inventory cleared, and so on. Performance may also be evaluated in terms of a number of supplementary offers accepted. For example, a vending machine may periodically offer a customer thirty free food items, to be redeemed over the course of a month, provided the customer switches his long distance phone service. The controller may evaluate the performance of the vending machine based on the number of such supplementary offers that were accepted during the sales period.

Determine whether a set of sales goals have been met

Examining a vending machine's performance over the foregoing sales period, the controller may determine whether sales goals have been met. Sales goals may include earning a predetermined amount of

profit (e.g., at least \$100), receiving a certain amount of revenue (e.g., at least \$300), selling a predetermined number of items (e.g., three hundred items), making at least a predetermined number of transactions (e.g., at least one hundred transactions), transacting with a predetermined number of customers (e.g., with fifty customers), and so on.

Collect a fee from the company based on whether the sales goals have been met, or distribute a portion of profits to the company

In various embodiments, if sales goals for the vending machine have not been met, then the controller may collect a fee from the company. The amount of the fee may be determined in various ways. In some embodiments, the fee may be equal to the amount by which profits fell short of desired profits. In some embodiments, the fee may be equal to some fraction of the amount by which profits fell short. The fee may also be determined as some fraction of a revenue shortfall. In various embodiments, the fee may be equal to some fixed amount for every non-monetary shortfall. For example, the fee may be determined as fifty cents for every customer short of eighty that transacted with the vending machine. Thus, if only seventy customers transacted with the vending machine, the fee would be equal to 50 cents/customer x (80 customer - 70 customers) = \$5. The fee may be collected by cash, check, wire transfer, or by any other means.

In some embodiments, the controller may receive other privileges if there is a shortfall. For example, if the controller was previously limited to sending out one promotional message per employee per day, the controller may increase this limit to two. In another example, if there was previously a lower limit of fifty employees on a promotional mailing list, this limit may be increased to sixty. In another example, if there was previously a restriction as to what times promotional mailings could be sent out (e.g., only during lunch hours), then these restrictions may be eased.

The ability to collect a fee from the company, or to obtain other privileges, may be important to the controller if the controller is to place a vending machine in an area where there is a low population of potential customers. By placing a vending machine in such an area, the controller is taking a financial risk. Thus, the ability to collect a fee from the company if sales goals are not met may allow the controller to mitigate this financial risk. The company, in turn, may benefit from the placement of a vending machine in terms of increased employee satisfaction. If it did not promise the controller a fee should the controller not meet sales goals, the company might be unable to obtain a vending machine and enjoy the associated benefits. In this way, companies with even a small number of employees may obtain vending machines.

In some embodiments, the controller may distribute a portion of profits, revenue, or other funds to the company. For example, the controller may distribute any profit in excess of \$300 per month to the company. As another example, the controller may distribute half of all revenue in excess of \$500 per month to the company. For instance, if revenue for a month is \$600, then the controller may distribute half of the amount in excess of \$500 (equal to $\frac{1}{2} \times (\$600 - \$500)$, or \$50) to the company. The controller may use any other desired scale for distributing funds to the company. For example, the controller may distribute one third of all profits in excess of \$400 but less than \$500, and one half of all profits in excess of \$500, capped at a total distribution of \$200.

Funds may be distributed to the company in the form of cash, check, or other consideration. Funds may also be distributed towards the company in the form of credits toward future shortfalls. For example, if a company is due \$100, the controller may withhold the \$100 in a special account. If, in a succeeding month, the company owes the controller money (e.g., due to a revenue shortfall), then the controller may deduct the funds owed to it from the \$100 account.

In various embodiments, funds may be distributed to the company in the form of products, or in the form of rights to free products. For example, if the controller owes the company \$100, then the controller may instead provide the company with one hundred sodas, with each soda presumably valued at \$1. In fact, the controller may provide the company with one hundred unique codes, each redeemable at the vending machine for a free soda. The company may then distribute the codes to its employees as it sees fit. The company may use the codes as reward mechanisms to reward employees for good work, for working late, for doing an extra job, etc.

Distributing excess profits, revenue, or other funds in the form of products has a number of benefits. First, the controller need not go through the trouble of writing a check and sending it to the company, nor of arranging for a wire transfer or electronic funds transfer. Rather, the controller may simply send codes to the company, redeemable for products from the vending machine. Secondly, the cost

to the controller of the products it gives away may be much less than the amount that the products represent. For example, the controller may provide the company with \$100 worth of sodas priced at retail value (e.g., at a \$1 per soda), even though the cost of the sodas to the controller (e.g., at wholesale cost), may be significantly less (e.g., thirty cents per soda). Third, when the controller provides a company with products, and the company distributes those products to its employees, there is likely to be a large amount of goodwill created between the employees and the company. Employees will enjoy receiving free products and will be happy that their efforts at work are appreciated by management. The company, in turn, is likely to be appreciative of the controller for the ability to provide products as rewards. The company is therefore likely to wish to continue doing business with the controller.

In various embodiments, such as where a company may be obligated to compensate the controller, or where the controller may be obligated to compensate the company, the controller or vending machine may present the company with an audit trail of sales, transactions, and/or benefits provided at the vending machine. For example, the controller may provide a listing of transactions, including a time, amount paid, amount used for tax, margin, method of payment (e.g., cash, credit), product(s) vended, code received (e.g., in exchange for a free product), person to whom the code was originally given (e.g., via e-mail), and so on. The controller may include any costs in its transaction report, such as the cost of power over the past week, or the cost of labor inherent in restocking the vending machine. The controller may aggregate the figures from various transactions to come up with a total amount of profit made for a sales period, a total amount of revenue for a sales period, and so on.

In various embodiments, if sales goals have not been met, then the controller may remove the vending machine from the company offices. For example, if the vending machine is not profitable, it may not make business sense for the vending machine to remain with the company. Therefore, a company official may be motivated to encourage employees to make purchases from the vending machine so that the company does not lose the vending machine. The company official may even compose and send his own promotional messages independently of the controller in order to encourage transactions at the vending machine. The company official may also receive "reminder" messages from the controller if the vending machine is not on track to meet sales goals (e.g., only 50% of goals have been met with only 20% of a time period for meeting the goals remaining), or has already failed to meet one or more goals. The company official, after receiving such reminder messages, may redouble his efforts to encourage the use of the vending machine.

ALTERNATE METHODS AND USES

One or more embodiments may include the formation of a deal between the company and the controller. The terms of the deal may specify, for example, what limitations are placed upon the controller in sending promotional messages to the company's employees, the sales targets of the vending machine placed in the company's offices, the amount by which the company is to compensate the controller if sales targets are not met, and so on. The deal may take the written form of a contract or other legal arrangement. Once a deal has been made, the controller may place the vending machine in or proximate to the company offices.

The foregoing embodiments have described one way in which a controller may obtain contact information for potential customers. That is, a controller may receive e-mail addresses of company employees when placing a vending machine in the company offices. However, it is foreseen that the controller may wish to obtain contact information for customers or potential customers in other ways. Some of these other ways will be described below. It should be noted that the following embodiments need not apply in particular to employees of a company, but may include any group of people, however unrelated.

In some embodiments, when a person interacts with a vending machine, the vending machine may solicit contact information from the person. For example, the vending machine may request an e-mail address, phone number, home mailing address, etc. The vending machine may solicit contact information by outputting a text message on a display screen, by backlighting a pre-composed message inscribed in the exterior of the vending machine, by outputting a prerecorded voice message, or through any other means.

The person may then provide contact information via any number of possible input devices on the vending machine, such as a touch screen.

When soliciting contact information, the vending machine may encourage a person by describing the potential benefits of providing such information. For example, the vending machine may indicate that the person may be alerted when hot new products come in stock, when there are sales at the vending machine, or when there are various special deals to be had at the vending machine.

The vending machine may also offer immediate benefits to a person who provides contact information. For example, a person may receive a free or discounted product from the vending machine for providing contact information. A person may also receive a coupon or certificate good for future free or discounted products at the vending machine. A person may receive benefits with other merchants as well. For example, a person may receive a certificate from the vending machine which is good for \$5 off any item at the clothing store where the vending machine happens to be located. The provision of benefits redeemable at other merchants is more fully described in copending U.S. Patent Application No. 09/714574, entitled "Method of outputting offers at a vending machine field", which was filed on November 16, 2000, and which is incorporated herein by reference for all purposes.

When soliciting contact information from a consumer, the vending machine may provide various assurances as to how the contact information will be used. For example, the vending machine may indicate that the contact information will not be provided to any other merchants or marketers besides the owner of the vending machine. The vending machine may also assure the customer that he will receive promotional messages at no more than a certain rate, e.g., at no more than two per week. The vending machine may further assure the consumer that he may opt out from the promotional mailing list at any time, and receive no further messages.

A benefit provided by the vending machine in return for contact information may be conditioned upon the fact that the contact information is valid. Therefore, in some embodiments, a vending machine may provide any benefit to the consumer via the contact channel. For example, the vending machine may e-mail a discount coupon to the consumer at the e-mail address provided by the consumer. The vending machine may also e-mail a code to the consumer, wherein the code may be keyed into the vending machine at a later time in return for a free product or other benefit. The consumer will then be able to receive the benefit only if he has provided a valid e-mail address that belongs to him.

In various embodiments, a consumer may also supply his e-mail address at a Website, such as at the Website of the controller. A consumer may visit the Website, type in his e-mail address, and indicate that he wishes to receive promotions for vending machines located in a particular geographic region (e.g., in the area near the consumer's home or near the consumer's workplace).

In one or more embodiments, a consumer may transact at a vending machine. The vending machine may instruct the consumer to send a message, such as an e-mail, to the controller or to the vending machine. If the consumer later sends such a message, then the vending machine and/or controller may obtain the consumer's contact information by looking at the address from which the message originated. The vending machine may encourage the consumer to send a message to the controller or vending machine by promising the consumer a benefit for doing so. For example, the consumer may be promised a free product at the vending machine if he sends an e-mail to the controller. When the user later sends such a message, the controller may reply with a code, coupon, or other indicia that is redeemable for a benefit at the vending machine.

One benefit a consumer may receive in return for providing an e-mail address or other contact information may be a sweepstakes entry. For example, a consumer may provide an e-mail address at a vending machine and receive a code in return. The consumer may later visit the Website of the controller and type in the code in order to be entered into a sweepstakes drawing. If the consumer wins, then the controller may e-mail the consumer with the good news, ask for the consumer's home address, and then mail the consumer a check for the winnings. In some embodiments, the consumer need not even visit the Website. Rather, the controller may enter the consumer into a sweepstakes drawing directly based on the consumer having provided his e-mail address at the vending machine. The controller may later inform the consumer (e.g., via e-mail) of whether or not the consumer has won.

In one or more embodiments, employees of a company, or other potential consumers may provide the controller with parameters for sending promotional information to them. For example, an employee may visit the Website of the controller. At the Website, the employee may answer a question "Inform me when..." after which are listed several check boxes labeled, "1) Items go on sale; 2) New items are

introduced; 3) Items run out of stock; 4) Caramel Popcorn is restocked; ..." The controller may then send promotional e-mails to the employee based on the preferences the employee filled out and based on the status of the employee's local vending machine. In some embodiments, a consumer may provide parameters or preferences while he is at a vending machine using, e.g., keypads or touch screen input devices.

Any of the aforementioned rules, criteria, and limitations for sending e-mails to the employees of a company might vary from employee to employee. For instance, the times at which a controller may send e-mails to employees may be different for night-shift and for day-shift employees. As another example, the controller may be allowed to send only one promotional e-mail per week to any company vice-president, but up to three per week to lower-level employees.

In one or more embodiments, the controller may be given special privileges to bypass company spam filters. For instance, Information Technology specialists at the company may work with the controller on the format of the controller's e-mails so that the e-mails will be able to bypass company filters. Information Technology Specialists, or other company employees, may also set the company spam filters to allow the passage of messages from the controller.

The controller or vending machine may periodically verify that company employees have actually received promotional messages. One method of verification may involve offering a particularly desirable benefit through a promotional e-mail. If the benefit is not redeemed, then the controller may assume that a company employee is not receiving promotional e-mails. For example, the controller might offer a company employee two free products at the vending machine, provided he enters a code from an e-mail. Presumably, such a benefit would be too good to ignore, unless a company employee was not seeing the promotional e-mails. Using another method, a vending machine may inquire during a transaction about information contained in a prior promotional message. For example, a vending machine may output three graphics on its display screen, and ask the customer to select the one that appeared in the last promotional e-mail. If customers consistently answer incorrectly, then the vending machine may assume its promotional messages are not being read. Using still another method, the controller may check for changes in sales patterns following the dissemination of a promotional message. If no such changes occur, then the controller may infer that the promotional message has not been seen by company employees, for example.

As mentioned, another way for promotional messages to bypass company spam filters may be for the vending machine to possess its own address or account on a company intranet.

In various embodiments, a vending machine of the present invention need not be in direct communication with the controller. The vending machine may not even be connected to a communications network. In such embodiments, a vending machine may receive information from the controller via a route operator. For example, a route operator may insert a disk into the vending machine, where the disk contains messages for the vending machine from the controller. Messages may indicate for example, what promotional codes are valid, how many times they may be used, what benefits the vending machine is to provide upon receiving the promotional codes, and so on. The vending machine may then record the use of promotional codes. Later, the vending machine may indicate via the route operator which codes were used, how often they were used, and so on. The vending machine may also report other information via the route operator, such as the total amount of sales for a given sales period, the particular products remaining in inventory, etc.

Other information that may be transmitted to the vending machine via the route operator may include what promotions to offer. For example, the controller may indicate to the vending machine that it should offer 50% off on all cupcakes until they sell out.

The controller may account for possible delays in its transmission of information to a vending machine by timing promotions to occur in the future. For example, suppose the controller wishes to offer a two-for-one package deal, where a consumer may buy any two items from the vending machine for \$1. However, the route operator will not visit the vending machine for another three days. Therefore, the controller may transmit a promotional message to company employees indicating that there will be a two-for-one package deal at the vending machine in three days (as soon as the route operator can get the message to the vending machine).

In one embodiment, the vending machine controller may instruct a company employee as to how to enable promotions at a vending machine. For example, the controller may instruct the HR Director at a

company to enter the code, "9321x2qa2z" into the vending machine. The vending machine may contain a database of codes and interpretations, and may therefore be able to interpret the aforementioned code as "offer a 20% discount on all carbonated drinks for the next three days." The vending machine may then implement a promotion without the need to wait for a route operator. Of course, the code entered by the HR Director may be valid only once, preventing the HR Director from re-starting the promotion at a later point at his own initiative.

In one or more embodiments, a promotional message may be directed to a subset of company employees, such as a single company employee, who is charged with encouraging other company employees to transact with the vending machine at the company. For example, the controller may send a message that reads, "Hey Bob! We need to squeeze \$80 more in sales from the vending machine in the next three days. See what you can do." Bob may then promote the vending machine at his company in any way he sees fit. He may send an e-mail to other company employees, he may post signs in the company offices, or he may talk to the company employees to encourage them to transact with the vending machine. For their efforts, the company employees charged with promoting the vending machine may receive special benefits, such as free or discounted products, package deals, or a portion of vending machine profits. In some cases, the company employees charged with promoting the vending machine may be company officials or may otherwise represent the company. Part of the benefits for promoting the vending machine may go to the company as a whole. For instance, a portion of profits from the vending machine may go towards the company holiday party.

Customer Accounts

In various embodiments, an employee's e-mail address may function as a code for receiving benefits at the vending machine. In this way, the vending machine and/or controller may track the number of benefits redeemed by an employee, and may also limit each employee to redeeming a particular number of benefits. In these embodiments, employees may be trusted not to use the e-mail addresses of other employees.

In various embodiments, an employee or other customer need not pay immediately for a vended product. Rather, a charge for the product may be posted to an account of the employee. The account may be a straight credit account, where, e.g., the employee owes the controller for purchases. Alternatively, the account may be backed by previously tendered funds, in which case an amount of a purchase may be deducted from such funds. Alternatively, a company official may be provided with a list of employees who owe money to the vending machine, and the company official may then collect from the employees. In another exemplary embodiment, amounts owed to the vending machine may be deducted from employees' paychecks.

If an account is a credit account, then the employee may be responsible for compensating the controller after predetermined periods of time. For example, at the end of every week, an employee may be responsible for paying the vending machine for purchases he made on credit during the prior week.

The employee may compensate the controller by inserting currency into the vending machine. The employee may also visit a Website of the controller and provide a credit card number. The employee may then authorize the controller to charge his credit card for the amount owed the vending machine. The employee may also insert a credit, debit, or other card into the vending machine. The vending machine may then process a financial transaction in standard fashion known in the art, thereby receiving funds from a financial account of the employee as compensation for items purchased on credit. The employee may further insert a check into the vending machine, the check made out for sufficient funds to cover the week's purchases.

One benefit of allowing a person to pay an aggregate total for purchases at a vending machine is that a number of credit card transactions may be reduced. For example, rather than a person separately charging his credit card for five different candy bars purchased over the course of a week, the person may charge his credit card once for the aggregate cost. The person may thereby avoid the inconvenience of taking out and swiping his credit card on every transaction. The controller may, in turn, avoid credit card fees for multiple, small transactions. Such fees may compromise a large percentage of small transactions.

There are a number of other ways in which an employee may compensate the controller for purchases made on credit. An employee may perform work. For example, an employee may answer

product survey questions at the vending machine using a touch screen to input his answers. Customer participation in surveys at a vending machine is more fully described in U.S. Patent No. 6161059, entitled "Vending machine method and apparatus for encouraging participation in a marketing effort", which was issued on December 12, 2000, and which is incorporated herein by reference for all purposes. An employee may also accept a marketing offer. For example, the employee may agree to switch long-distance phone services, in return for which his debt may be waived. An employee may further provide names and or contact information for other people. The controller may then have the opportunity to market to these other people by transmitting a promotional message to the supplied e-mail address, for example. In another embodiment, the amount of employee purchases may be deducted from the employee's paycheck. In another embodiment, an unpaid amount may be deducted from, or charged to a departmental or company account. For example, if an employee does not pay a \$5.00 credit owed by him, then the \$5.00 charge may be posted to a company account. The company may then be responsible for paying the \$5.00. The company may, in turn, seek compensation from the employee. In further embodiments, an employee may pay using a PayPal™ and/or various forms of electronic currency transfer.

In various embodiments, an employee with an outstanding charge to his account may be charged interest. For example, the vending machine may have a prevailing interest rate of 5% per year, compounded weekly. Therefore, an employee may owe more and more interest for every week in which he does not pay an outstanding balance.

To purchase an item on credit, an employee may enter one or more identifiers. He may enter a name, phone number (e.g., office extension), birthday, room number, e-mail address, title (e.g., "VP Marketing"), or other identifier, including a random identifier. The employee may also purchase on credit using a non-employee-specific account. For example, an employee may make a purchase using an account of the legal department or of the finance department. If the employee is charging a purchase to a non-employee specific account, the employee may be required to enter some authorization code, or some other identifier that proves he has the authority to charge such an account. For example, the employee may enter an identifier proving that he has at least a director level title. Such an identifier may be, for example, a title or a code that has been given out only to employees with director level titles or above. One exemplary use of a non-employee-specific account may be the purchase of multiple items for a meeting. For example, the head of sales may use an account for the sales department to purchase a number of sodas for a meeting.

An employee may identify himself in a number of other ways in order to gain access to an account. An employee may use an electronic access card. For example, a vending machine may be configured to recognize the same access cards that are used by the company offices. The vending machine may be further configured to recognize individual employees from their access cards. An employee may also identify himself through biometric information, such as fingerprints, voiceprints, retinal scans, facial scans, and so on.

In various embodiments, a person may fund an account in advance. For example, an employee may insert a \$20 bill into the vending machine without receiving any change. The employee may then draw upon the \$20 in making further purchases, with each additional purchase deducting from the \$20. The controller may benefit from this advanced funding behavior, because people with funded accounts may be more likely to make purchases. Thus, the controller may provide a person with a funding bonus. For example, the controller may provide an employee with a 20% bonus such that, for example, funding an account with \$20 may result in an account balance of \$24. When an employee funds an account, the employee may determine a password that will allow him access to the funds in the future.

In various embodiments, a first employee may fund an account of a second employee. For example, a first employee may insert \$5 into a vending machine, key in an identifier for the second employee (e.g., the second employee's name), and indicate that the \$5 is to be added to the second employee's account. Alternatively, the \$5 may be used to pay off a debt accumulated by the second employee. When a first employee funds the account of a second, the funding may be considered a gift. For instance, a first employee may provide a second with a \$5 gift credit at a vending machine in return for the second employee's having covered the first at a meeting. The first employee may even key in a message for the second employee when he indicates a desire to provide funds for the second. An exemplary message might read, "Hey, you did a great job on that project last week. Use this to buy yourself a few cold drinks. -Bob." When the second employee later keys in an identifier to make a purchase using his account, the message from the first may appear. In any event, a message may appear from the vending machine indicating that another person has provided the second employee with a gift of \$5. In various embodiments, the gift may be anonymous, and so the second employee may not know the identity of the

first employee. As with self-funding events, gifting events may result in bonus funds being awarded. For example, when a first employee gives a second employee a gift of \$5, the second employee may have \$6 added to his account, the extra dollar courtesy of the controller.

In various embodiments, an employee may purchase a gift certificate on credit. For example, an employee may insert \$10 into the vending machine. The vending machine may then print out a gift certificate for \$10. The employee may then give the gift certificate to another person. The other person may then purchase vending items by inserting the gift certificate into the vending machine, or by entering a code on the gift certificate into the vending machine. Of course, a person need not buy a gift certificate on credit. Additionally, a vending machine may add a bonus amount to a gift certificate. For example, a person may purchase an \$11 gift certificate for \$10.

The status of an employee's account may be sent to him periodically by the controller. A status may include recent purchases made, amounts owed, or funds available for future purchases. The status report may include amounts of accrued interest, bonus amounts added to the account, or gifts added to the account. The status report may include warnings about suspension of privileges. For example, a user will not be allowed to make further purchases on credit unless he pays off prior purchases. The status report may indicate a manner in which the employee may pay off prior purchases, such as e.g., visiting a Website of the controller and entering a credit card number, or inserting currency at the vending machine. The status report may also include a message that a password or other account access code is expiring and/or should be changed within a certain time period.

Employee accounts may be set up by employees themselves. For example, a person may set up an account by visiting the Website of the central controller and by typing in an identifier (such as a name) and an access code or password. The identifier and password may later be keyed into the vending machine in order to access the account. For example, the identifier and password may later be keyed in to allow the employee to make purchases on credit, or to make a deposit to his account. Alternatively, an identifier or password alone may be sufficient for accessing an account. At the Website of the central controller, the employee may also provide a financial account identifier or other means to fund his account. The employee may or may not authorize automatic deductions from the financial account for purchases made on credit. In various embodiments, an employee may also set up an account at a vending machine. Here too, the employee may choose an identifier and password, and may enter financial account information.

In various embodiments, a person's account with the controller may be set up automatically by the controller due, e.g., to the person's status as an employee of a company in which the controller has placed a vending machine. For example, when the controller first agrees to place a vending machine in a company, the controller may obtain a list of the company employee e-mail addresses. The controller may then set up accounts automatically with the e-mail addresses serving as identifiers or access codes to the account. An employee may subsequently purchase an item from the vending machine on credit by simply entering his e-mail address at the vending machine. In some embodiments, a company may provide guidance to the controller over which accounts should be set up automatically. For example, the controller may indicate that accounts should be set up automatically only for employees with more than one year of work experience at the company.

In some embodiments, an employee account may be set up automatically, but the employee may still be required to activate the account. Activating an account may include agreeing to certain terms or conditions. Agreeing may include agreeing to pay the balance of an account periodically, agreeing not to share passwords or account identifiers, agreeing not to use other people's accounts, and so on. Activating an account may also include determining an identifier and access code or password.

In various embodiments, when an employee first activates or first uses an account, the controller may automatically add funds to the employee's account. For example, the controller may automatically put \$3.00 into a person's account when he activates it. In this way, the person may make \$3.00 worth of purchases, without having to insert any money, and without owing anything. This may acclimate a person to making purchases without depositing money.

For embodiments in which people may make purchases on credit, honest behavior may be more likely when people are making purchases at a vending machine within their own company. By acting dishonestly, e.g., by making purchases on credit without intending to repay the credit extension, or by attempting to use someone else's account without permission, a person might jeopardize his standing at a company. Therefore, embodiments in which a person may make purchases on credit, or where a person may fund an account in advance, are particularly well suited to situations where a vending machine is

internal to a company. Furthermore, fraud may be avoided if a company official has the ability to access or track account records. For example, if the Human Resources director can see that a given employee has a large unpaid debt to the vending machine, the person may be more likely to repay the debt.

In various embodiments, the controller or vending machine may enable users to have accounts by tracking one or more of: (i) a user financial account identifier, such as a credit card or debit card number; (ii) a credit limit for user (i.e., a limit on a total amount of purchases a user can make at a vending machine without paying immediately); and (iii) an amount currently owed by a user based on previous purchases made on credit. The controller may track the aforementioned information in a database such as the user database of figure 6. For example, tracking a user financial account identifier may allow the controller to bill the financial account for the total price of purchases made on credit by the user during a given time period. Additionally, the controller may track a user identifier, password, and/or access code; an interest rate that is to be applied to unpaid balances; a schedule of times when a user is obligated to repay outstanding balances; a minimum payment amount or percent that indicates, for example, the minimum amount of an outstanding credit balance that a user must repay at a given time; contact information for an official at the user's company or for some other party that may be able to influence the user to repay outstanding balances; and so on.

In one or more embodiments, a controller or vending machine may treat the recipients of messages as two or more different groups of people. For example, the controller may send different promotional messages to the accounting department of a company than are sent to the legal department of the company. The controller may use this distinction between groups of people to promote some friendly competition. For instance, the controller may encourage the accounting department to buy more at the vending machine than does the legal department. At the same time, the controller may encourage the legal department to buy more than does the accounting department. At the end of a designated period, such as at the end of a month, the controller may provide a benefit to the group that has collectively made the most purchases. For example, if the accounting department bought one hundred beverages as a whole, and the legal department bought eighty beverages as a whole, then each person in the accounting department may be rewarded with a free beverage at the vending machine. Other exemplary groups of people might be managers, non-managers, men, women, new employees, senior employees, employees of a first company, employees of a second company, people with names beginning with "A" through "M", and so on. In addition to increasing the sales at a vending machine, the group competition may lead to more cohesion in general among groups of people at a company.

The controller may also single out various groups as a way to make the group members feel important. For example, the controller may send a promotional message to the accounting group indicating that there is a two-for-one package deal going on today, just for accountants. The controller may provide a unique code in each message to a member of the accounting department, so that only members of that department may obtain the package deal. The employees of the accounting department, upon receiving such a promotional message, may feel especially privileged and may therefore be more likely to obtain the two-for-one package deal.

In various embodiments, two or more groups may attempt to promote sales at the vending machine. Each group may have an associated code. Whenever a code is inputted into a vending machine during a transaction, the corresponding group may get credit for the transaction. Thus, members of a group may recruit friends and coworkers and others to make purchases at the vending machine, and to use the group's code, in order that the group may get credit for the transaction. At the end of a designated period, the group associated with the most number of transactions may win a prize. The promotion of vending machines by non-owners is more fully described in U.S. Patent Application No. 09/688372, entitled "Method and apparatus for facilitating promotion of sales at a vending" which was filed on Oct 10, 2000, and which is incorporated herein by reference for all purposes.

A promotional message may promote other merchants besides the controller, and/or other products besides those sold in a vending machine. For example, a message might read, "Twinkies® are 30% off today at the vending machine. And if you get some Twinkies® cream on you, don't worry, because Tide® liquid laundry detergent can remove the stain in no time." The controller may receive a payment from the makers or sellers of other products or services it promotes in its promotional messages.

In some embodiments, a controller may offer in a promotional message a benefit, such as a free product at the vending machine, if a consumer is willing to receive one or more messages from a third-party merchant (i.e., a merchant other than the controller). The controller may also offer a benefit if a

consumer will allow the promoter to provide the consumer's e-mail address to a third-party merchant. Embodiments for encouraging a customer to review a marketing promotion or to participate in a survey are more fully described in U.S. Patent No. 6161059, entitled "Vending machine method and apparatus for encouraging participation in a marketing effort", which was issued on December 12, 2000, and which is incorporated herein by reference for all purposes.

The controller may, in various embodiments, provide money or other benefits to a charity or other organization. The controller may base the donations on sales at a vending machine. For example, the controller may donate 5% of all profits at a vending machine to a charity. As another example, the vending machine may donate 40% of revenue received from the sale of a particular item, such as Arctic Ice Cream Bars. As a third example, the vending machine may donate 20% of all revenue received at a vending machine during a certain promotional period, such as during the two hours before a restocking event.

The controller or vending machine may emphasize in promotional messages that a portion of sales at the vending machine will benefit charity. For example, a promotional message may say, "If you buy something from the vending machine by the elevator in the next hour, ten cents will go to supporting the Special Olympics." Knowing that their purchases are contributing to a worthy cause, people may be encouraged to make purchases at vending machines.

In various embodiments, charitable donations from revenue at a vending machine may be based only on purchases in which a customer submits a code. For example, the controller may send a promotional message that includes a code to be entered by customers who wish a portion of their purchases to go to charity. A user who receives such a message may visit a vending machine, make a purchase, and enter the corresponding code. The controller may then donate a portion of the purchase price paid by the customer to charity. In some embodiments, there may be multiple possible codes for a customer to enter. Each code may correspond to a different charity. The customer may indicate a desired charity to receive the donation based on the code he enters.

In various embodiments, employees at a company may come to a joint agreement as to the charity to which a vending machine will donate. For example, employees at the company may vote on the charity. Each employee may indicate a desired charity by, for example, replying to a promotional message with a particular charity indicated (e.g., written in the subject line of the reply), by visiting the Website of the controller and selecting a charity, by indicating a charity at the vending machine (e.g., by entering the name of a charity with a touch screen keypad), or in some other manner. In some embodiments, an employee's sway in the selection of a charity will depend on his purchase history at the vending machine. For example, an employee may be entitled to one vote for every dollar he has spent at the vending machine in the past week.

The ability of employees or other customers of a vending machine to participate in the selection of a charity may make them more actively interested in the vending machine, and therefore more likely to make purchases. In addition, the employees are more likely to care about the charity that is ultimately selected, and may therefore be more likely to make purchases that will benefit the charity.

In various embodiments, a vending machine may print a promotional message for a customer in conjunction with a transaction at the vending machine. For example, the customer may purchase a diet soda. The vending machine may then print out a coupon redeemable for fifty cents off another diet soda if it is purchased in the next week. The customer may thereby be encouraged to return to the vending machine in the near future. In general, promotional messages printed out directly at a vending machine may include any of the types of promotions described herein, such as indications of a discount, indications of a two-for-one deal, indications of a new product, and so on. Promotional messages may also be tailored to certain customers, provided the vending machine is able to ascertain information about the customer. The vending machine may, at minimum, ascertain at least one product the customer likes based on the current transaction it conducts with the customer. Accordingly, for example, if a customer has just bought a first type of drink, then the vending machine may print a message indicating that the customer might enjoy trying a second, similar type of drink. A vending machine may ascertain additional information about a customer via image, or voice analysis. For example, the vending machine may be programmed to identify the age or gender of the customer based on visual and audio cues.

In various embodiments, a vending machine may print out a promotional message consisting of a game piece or game entry. For example, a user may collect such game pieces and try to obtain a complete set of a particular type of game piece (e.g., a complete color group in a Monopoly®-themed game).

In various embodiments, a vending machine may print out a promotional message for any customer that walks by, even if the customer does not engage in a transaction at the vending machine. The vending machine may, for example, have a promotional message perpetually dangling from a message printer. If the message is taken by a passer-by, the vending machine may print out a new message to dangle for the next passer-by.

In various embodiments, a vending machine may produce printed promotional messages after every transaction at a vending machine, so that customers become accustomed to receiving such promotional messages from the vending machines.

In various embodiments, a first consumer may derive benefit at a vending machine from encouraging a second consumer (e.g., a friend) to make a purchase at a vending machine. When a person transacts at a vending machine, the person may have the opportunity to indicate the person who encouraged him to visit the vending machine. For example, when Bob makes a purchase at a vending machine, Bob may key in the e-mail address for Linda Brown, lbrown@sunrise.com, in order to give Linda credit for referring him.

One person may indicate another in various ways. The referring party may be indicated by his or her name, e-mail address, phone number, pseudonym or handle, or by an identifying code. An identifying code may be provided to e.g., an established customer of the vending machine. Such an identifying code may uniquely identify the customer. The customer's friend may then indicate the customer as a referring party by keying in the customer's identifying code when making a purchase from the vending machine.

A referring customer may benefit in a number of ways. The referring customer may receive free or discounted products, two-for-one specials, special notices about the presence of new products, entries into sweepstakes drawings, and so on. The referring customer may receive a benefit whose magnitude is related to the number of customers he refers, to the number of customers referred by the customers he refers (ad infinitum), to the amount of purchases made by customers he refers, etc. For example, a customer may receive twenty cents off the purchase price of an item for every customer he refers.

A promotional message sent to a customer may therefore pertain to the customer's referral history. For example, a promotional message may thank a customer for the five people he has referred in the past week. The promotional message may further indicate a benefit to which a customer is entitled based on the referrals he has made. A promotional message, such as a message to a new customer, may indicate that the person referring the new customer has been given adequate credit. For example, a message may say, "Thanks for trying the HealthNut vending machine. We have given your friend Linda credit for referring you."

In various embodiments, a consumer may build towards a benefit through a series of transactions. For example, a consumer's eleventh item at a vending machine may be free. Thus, through ten purchases, a consumer is building towards earning a free eleventh item. Exemplary benefits include free or discounted products, two-for-one deals, free downloads from the vending machine, and so on.

A consumer's purchases may be tracked by the controller or vending machine. For example, each time the consumer makes a purchase, he provides an identifier, allowing the vending machine to add one to a tally of his purchases. A consumer's purchases may also be tracked on a card the consumer may carry with him. For example, the consumer may carry a plastic card, which he inserts into the vending machine during each transaction. The vending machine may alter the information stored on a magnetic stripe of the card to indicate that the customer has completed another purchase. As will be appreciated, the vending machine may also alter the card by making a physical marking, such as punching a hole in the card, placing a stamp on the card, or nicking the edge of the card. The card may also include a smart card, in which case the vending machine may download updated information into the memory of the card with each purchase.

A consumer who is building towards a benefit may be motivated to continue returning to a vending machine, at least until he has received the benefit. Further, the consumer will be motivated to make a purchase at a particular vending machine, the one providing him with a benefit, rather than at any other.

Promotional messages may accordingly include information about a consumer's progress towards earning a benefit. For example, a promotional message may say, "Jane, great news! You need to make only three more purchases at the elevator vending machine before you can take a free Coke@!" In addition, promotional messages may advertise the fact that a person can work towards earning a benefit at a vending machine. In various embodiments, the vending machine, controller, a company representative, or

other party, may declare a day or a time period to be a “vending drive.” Similar to a blood drive, a vending drive may be a time when people are encouraged to make purchases from the vending machine. Progress towards revenue goals may be tracked. Such progress may be displayed at the vending machine and via promotional e-mails. Similarly the onset of the vending drive may be declared via displays at the vending machine and via promotional e-mails. A portion of proceeds from a vending drive may, in some embodiments, go towards a charitable cause.

Methods for promoting a vending machine may include distributing hard-copy flyers to employees. For example, flyers may be placed in employees’ mailboxes. Such flyers may be distributed at the behest of a company official. For example, the company official may instruct mailroom workers to print and/or distribute flyers promoting the vending machine. The content of the flyers may originate from the controller. For example, the controller may e-mail a message to a company official. The company official may then have the mailroom workers print the message in the form of flyers. Alternatively, the controller may send hard copies of the flyers to the company, to then be distributed to the various employees. In another alternative, the content of the flyers may be created by the company official who may, for example, wish to earn revenue for the company through sales at the vending machine.

In various embodiments, promotional messages may be physically attached to vended items. For example, a package of potato chips may have a promotional message stapled to it. When a person then buys the potato chips, the person may read and act upon the promotional message. Promotional messages may be attached to vended products by the route operator who fills the vending machines. In various embodiments, promotional messages may be printed on stickers. Thus, the promotional messages may be affixed to products by pressing the adhesive sides of the stickers to the products.

DESCRIPTION OF THE FIGURES

1. System Overview
 - Controller
 - Vending Machine
 - Vending Machine
 - Vending Machine
 - User Device
 - User Device
 - User Device
2. Controller
 - Processor
 - Communications Port
 - Program
 - Vending Machine Database
 - User Database
 - Promotional Message Database
 - Promotional Code Database
 - Company Database
3. Vending Machine
 - Processor
 - Display Device (e.g., for displaying general instructions or promotions. For instance, “pick one red item and one green item,” or “enter your discount code to get an item 50% off.”)
 - User Input Device (e.g., alphanumeric keys, selector dial, or set of buttons associated with a respective set of item dispensers)
 - Currency Acceptor (e.g., coin acceptor, bill validator, magnetic stripe reader)
 - Currency Storage Apparatus (“hopper”)

- Item Dispensers
 - Price Display (e.g., for displaying prices of individual items)
 - Change Dispenser
 - Goods Dispenser
 - Inventory Sensor
 - Communications Port (may include network connection and/or wireless transceiver for receiving signals from e.g., cell phones)
 - Program
 -
4. User Device
- Processor
 - Display Device
 - User Input Device
 - Communications Port
 - Program

Controller Databases

5. Vending Machine Database
- Vending Machine Identifier (V1111; V2222; V3333)
 - Type (Canned Beverage; Snack Food; Coffee)
 - Company Host (ABC Corporation; XYZ Enterprises; PQR Consulting)
 - Location (121 Commerce Plaza, 3rd floor lobby; 888 XYZ Square, 5th floor Cafeteria; 777 Hope St. Main Entrance)
 - Inventory Capacity (10 Types, 20 Each; 40 Types, 10 Each; 2 Types, Approx 200 Total Coffee Vends)
6. User Database
- User Identifier (U111123; U222234; U333345)
 - Name (Heidi Ross; Robert Conner; Herbert Weingardt)
 - Company (ABC Corporation; ABC Corporation; XYZ Enterprises)
 - E-mail address (heidi@abccorp.com; rconner@abccorp.com; herb@xyzcorp.com)
 - Purchase Frequency (2 per week; 1 per month; never)
 - Favored Product(s) (Hershey's®, M&M's®, BBQ Potato Chips; N/A)
 - Mailing List Inclusion (ok, ok, opt out)
 - Financial Account Identifier (1111-1111-1111-1111; 2222-2222-2222-2222; N/A) [e.g., Herbert has no option to purchase on credit]
 - Purchase Credit Limit (\$10; \$50; N/A)
 - Current Outstanding Balance (\$0; \$23; N/A)
7. Promotional Message Database
- Promotion Identifier (P1221; P2332; P3443)
 - Trigger (Twinkies® Inventory > 20 x days until restock; No other promotions in place (i.e. this is a default message); Request and payment by Great Sports News Company)
 - Vending machine(s) promoted (V4321; V5432, V6543; V8888)
 - Associated Codes (C9se3r4; Cgh0100, Cgh0101, Cgh0102 ... Cgh0129; Cku3000, Cku3001, Cku3002, ... Cku3099)
 - Promotional Message Summary (Twinkies® 40% off until stock runs out; Any two products for \$1; 1 Month Membership at GreatSportsNews.com with any purchase)
 - Promotional Duration (Until stock runs out; 24 hours, 3 days)
 - Number of Promotions Sent (3; 30; 100)
 - Recipients (U112233, U223344, U334455; U445566, U556677, U667788, U778899...; U100001, U200002, U300003, U400004...)
 - Number of promotions redeemed (1; 9; 24)

8. Promotional Code Database

- Code (CQv32z9; C98cfw3; C2c93kk)
- Number of valid uses (1; 2; 5)
- Number of times used so far (0; 1; 5)
- Users provided with this code (U333444; U888999; U111333, U222444, U333555, U444666, U555777)
- Times of Validity (always; until 5:00 PM 10/3/06; from 1:00 PM to 4:00 PM 10/4/06)
- Benefit to be provided in exchange for valid presentment of code(Free product of user's choice; Any drink together with any snack for \$1; 1 Twinkie® for 50% off)

9. Company Database (this database contains the rules the company sets as to when employees can be e-mailed, among other things)

- Company Identifier (E1122; E2233; E3344)
- Company Name (Phil's Machine Shop; Madison Mutual Trading Group; Granite Accountants)
- Company Location (34 Veterans Avenue; 289 Patriot Blvd; 2233 Fisherman's Drive)
- Number of employees (20; 150; 90)
- E-mail list address (N/A; N/A; VendingMachine@GA.com) [This is a company list to which the controller may send an e-mail, after which it will be forwarded to people's individual e-mail accounts. N/A may imply that the controller must e-mail employees directly]
- Rules (1 e-mail per employee per day; 100 e-mails total per day, no e-mails between 9 AM and 12 PM, nor between 1 PM and 5 PM; limit of 2 e-mails to the list per day)

10. Flow Chart: Main

- Determine a company
- Receive from the company a list of employee e-mail addresses
- Receive from the company a set of criteria required for contacting the employees
- Place a vending machine in proximity to the company offices
- Determine a promotional message for the vending machine
- Transmit the promotional message to one or more employee e-mail addresses in accordance with the set of criteria
- Perform a transaction at the vending machine
- Receive an indication that an employee wishes to opt out of the e-mail list
- Determine an end to a sales period
- Have sales goals been met?
 - No: Collect a fee from the company
 - Yes: Distribute a portion of sales to the company

11. Flow Chart: Providing a benefit in exchange for contact information

- Receive a customer input at a vending machine
- Present an offer of a benefit in return for the customer's contact information
- Receive contact information
- Determine whether the contact information is valid
- Provide the benefit to the customer based on the contact information being valid

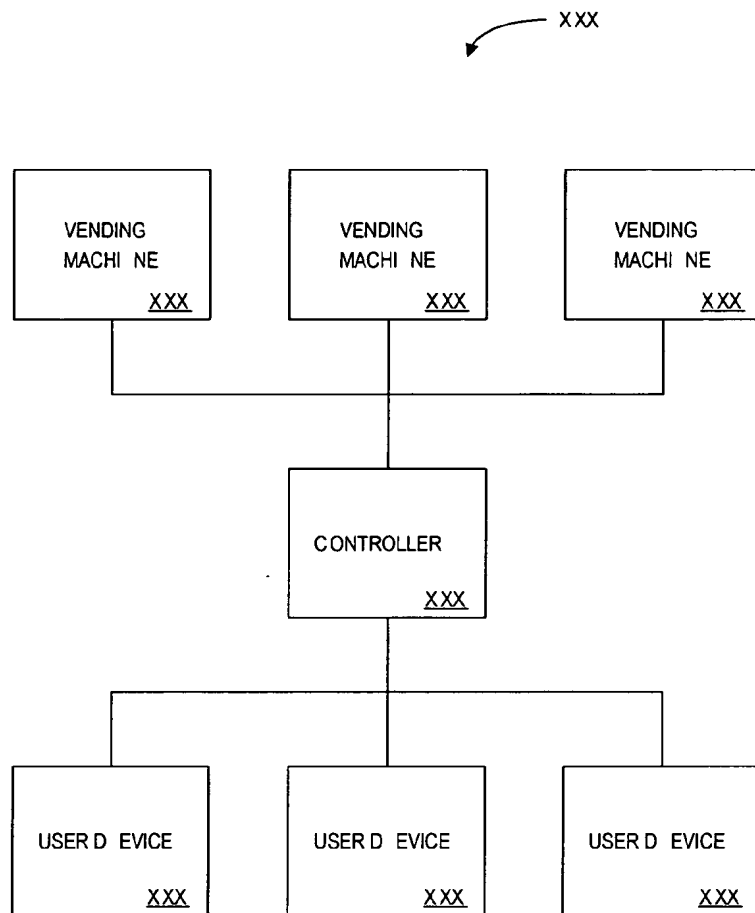


FIG. 1

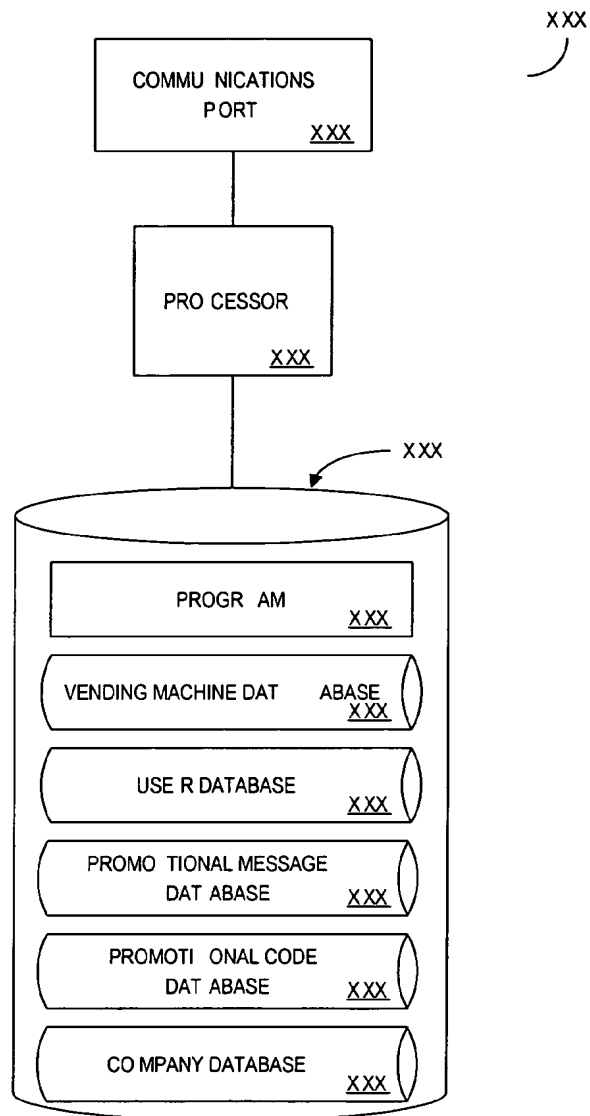


FIG. 2

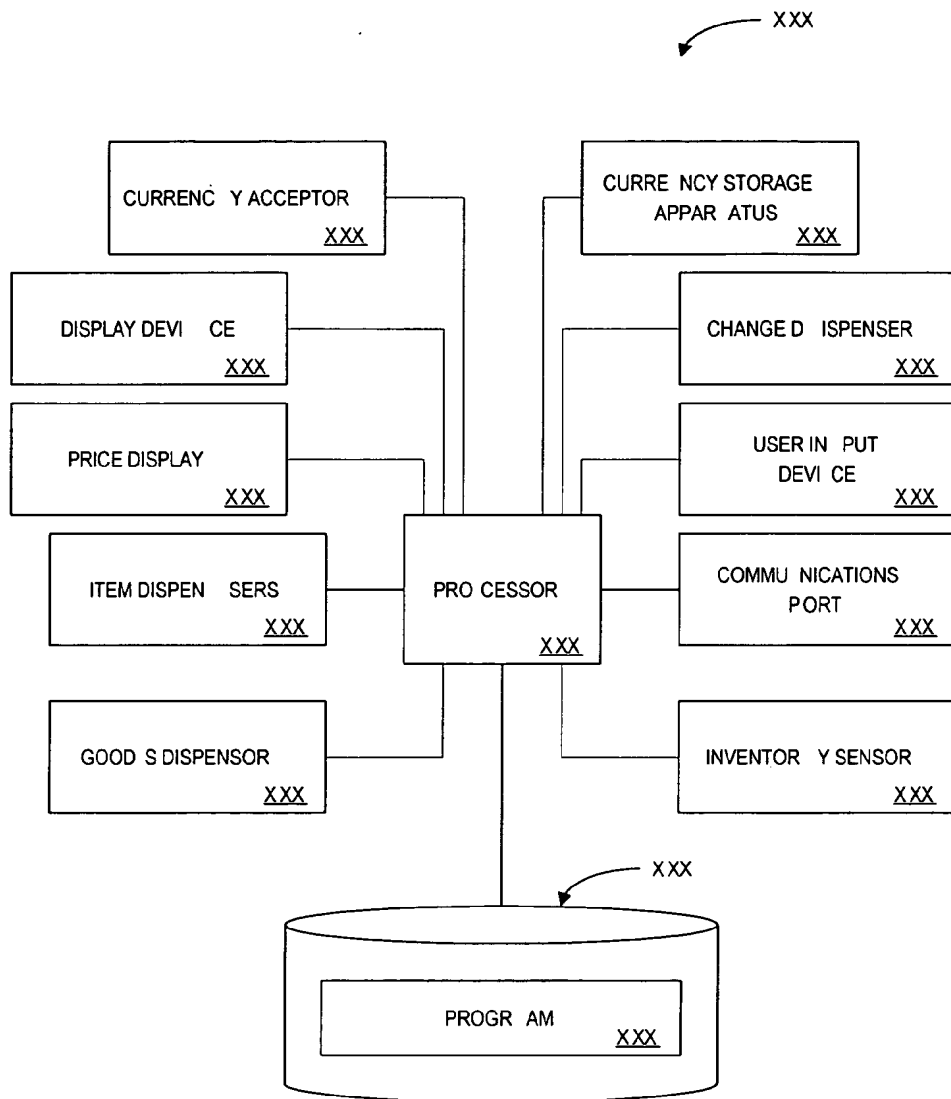


FIG. 3

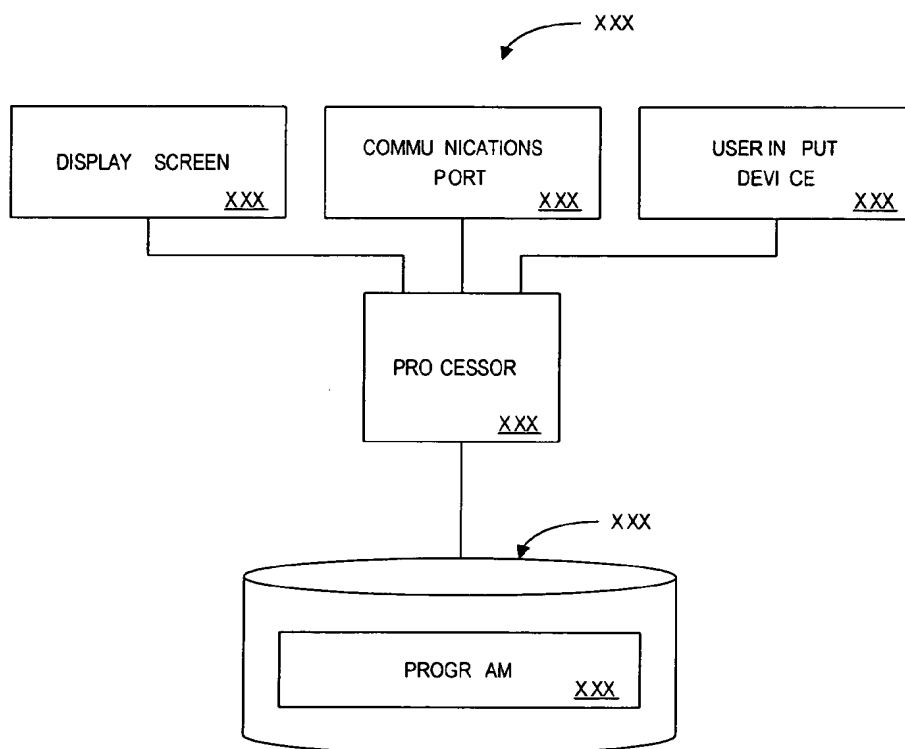


FIG. 4

XXX

VENDING MACHINE IDENTIFIER XXX	TYPE XXX	COMPANY HOST XXX	LOCATION XXX	INVENTORY CAPACITY XXX
V1111	CAN NED BEVERAGE	ABC COR PORATION	121 C OMMERCE PLAZA, 3RD FLOOR LOB BY	10 TYPE S, 20 EACH
V2222	SNACK FOOD	XYZ ENTER PRISES	888 XYZ SQUARE, 5TH FLOOR CAF ETERIA	40 TYPE S, 10 EACH
V3333	COFFEE	PQR CONS ULTING	777 HOPE ST. MAIN ENTRANCE	2 TYPES, APPROXIMATE 200 TOTAL COFFEE VENDS

FIG. 5

XXX

USER IDENTIFIER XXX	NAME XXX	COMPANY XXX	EMAIL ADDRESS XXX	X
U1111 23	HEIDI ROSS	ABC CORPORATION	HEIDI@ABC CORP.COM	X
U2222 34	ROBERT CONNER	ABC CORPORATION	RCONNER@ABCCORP.COM	X
U3333 45	HERBERT W. EINGARDT	XYZ ENTERPRISES	HERB@XYZCORP.COM	X

X	PURCHASE FREQUENCY XXX	FAVORED PRODUCT(S) XXX	MAILING LIST INCLUSION XXX	FINANCIAL ACCOUNT IDENTIFIER XXX	PURCHASE CREDIT LIMIT XXX	CURRENT OUTSTANDING BALANCE XXX
X	2 PER WEEK	HERSHEY'S(R), M&M'S(R)	OK	1111-1111-1111-1111	\$10	\$0
X	1 PER MONTH	BBQ POTATO CHIPS	OK	2222-2222-2222-2222	\$50	\$23
X	NEVER	N/A	OPT OUT	N/A	N/A	N/A

FIG. 6

XXX

PROMOTIONAL IDENTIFIER XXX	TRIGGER XXX	VENDING MACHINE(S) PROMOTED XXX	ASSOCIATED CODES XXX	PROMOTIONAL MESSAGE SUMMARY XXX	X
P1221	TWINKIES(R) INVENTORY > 20 X RE STOCK	V4321	C9s e3r4	TWINKIES(R) 40% OFF UNTIL STOCK RUNS OUT	X
P2332	NO OTHER PROMOTION IN EFFECT (DEFAULT MESSAGE)	V5432, V6543	Cgh0100, Cgh01 01, Cgh 0102, ...Cgh0129	ANY TWO PRODUCTS FOR \$1	X
P3443	PAYMENT AND REQUEST BY GREAT NEWS COMPANY	V8888	Cku3000, Cku3001, Cku300 2 ...Cku3099	1 MONTH MEMBERSHIP GREATSPORTSNEWS.COM WITH A NY PURCHASE	X

X	PROMOTIONAL DURATION XXX	NUMBER OF PROMOTIONS SENT XXX	RECIPIENTS XXX	NUMBER OF PROMOTIONS REDEEMED XXX
X	UNTIL STOCK RUNS OUT	3	U112233, U2233 44, U3344 55	1
X	24 HOURS	30	U445566, U5566 77, U66 7788, U778899...	9
X	3 DAYS	100	U100001, U2000 02, U30 0003, U400004...	24

FIG. 7

CODE XXX	NUMBER OF VA LID USES XXX	NUMBER OF TIMES USE D SO FAR XXX	USERS PROVIDED WITH THIS CODE XXX	BENEFIT TO BE PROVIDED IN EXCHANGE FOR V ALID PRESENTMEN T OF CODE XXX
CQV32 z9	1	0	U3334 44	FREE PRODUCT OF USER'S CHOI CE
C9 8ctw3	2	1	U8889 99	ANY DRINK TOGETHER WITH ANY SNACK FOR \$1
C2c 93kk	5	5	U1 11333, U222444, U333555, U444666, U5 55777	1 TWINKIE(R) FOR 50% OFF

FIG. 8

COMPANY IDENTIFIER	COMPANY NAME	COMPANY LOCATION	NUMBER OF EMPLOYEES	EMAIL LIST ADDRESS	RULES
E1122	PHIL'S MACHINE SHOP	34 VE TERANS AVENUE	20	N/A	1 EMAIL PER EMPLOYEE PER DAY
E2233	MADISON MUTUAL TRADING COMPANY	289 PATRIOT BLVD	150	N/A	100 EMAILS TOTAL PER DAY, NO EMAILS BETWEEN 9 AM AND 12 PM NO R BETWEEN 1 PM AND 5 PM
E3344	GRANITE ACCOUNTANTS	2233 FISHERMAN'S DRI VE	90	VENDING MACHINE@GA.COM	LIMIT OF 2 EMAILS TO THE LI ST PER DAY

FIG. 9

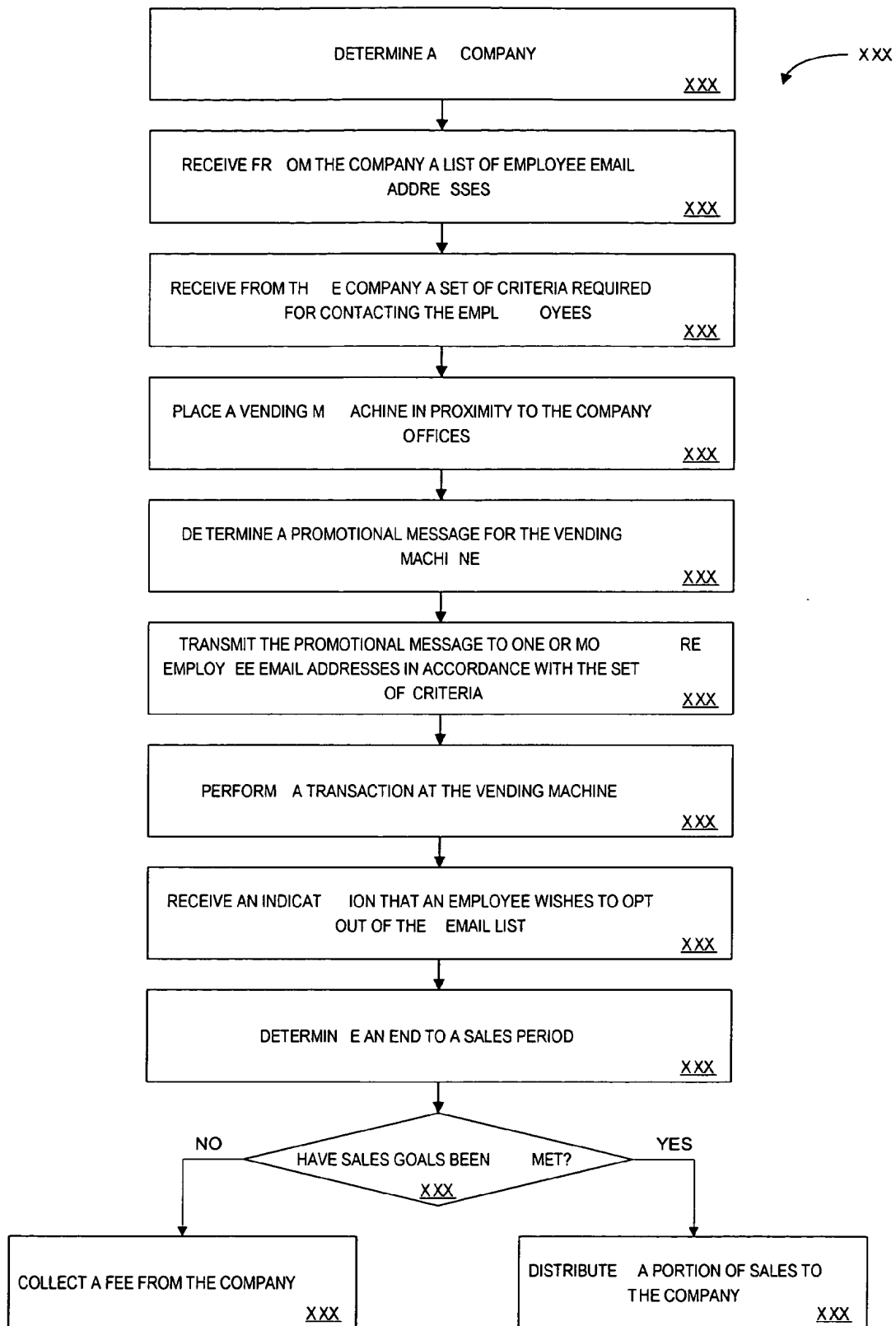


FIG. 10

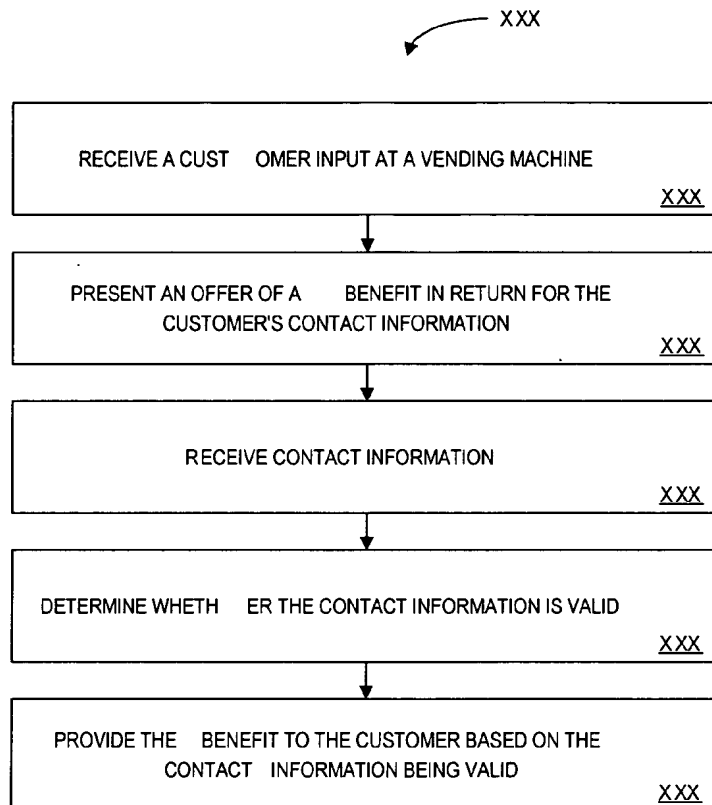


FIG. 11